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Road-Rail Fares Disparity

DURING his recent visit to Manchester, Sir Cyril Hurcomb, Chairman of the British Transport Commission, was questioned as to the possibility of an upward adjustment of road passenger fares to nearer the level of railway fares. Naturally, his reply was cautious, but although he said that he did not think any drastic changes were likely to be made on local services, he expressed the view that it would be necessary to have less disparity than at present between road and rail fares on some long-distance routes. To that extent he endorsed the view in our editorial article, "Swings or Roundabouts," in our September 17 issue. Another suggestion in that article, that a big change might be brought about with improved train services when more rolling stock was available, was subscribed to by Sir Cyril Hurcomb. He said that one of the main reasons why railway passenger returns were disappointing was the shortage of coaching stock. "We still have a substantial shortage of this stock, and until we get more of it we shall not be in a position to give the public the special kind of excursion facilities that we should like to give. I think that by next summer we shall be better off," he added.

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Sidney Garcke—Pioneer of Provincial Buses

No man did more to change the social habits of small-town and village life than Sidney Garcke, whose death last Sunday at the age of 63 we record with regret. His father, Emile Garcke, was the founder of the British Electric Traction Co. Ltd., which pioneered the conversion of horse tramway systems to electric traction at the turn of the century, and he envisaged light railway extensions through rural parts. With the spread of municipal trading, and difficulties with legislation, it became clear that this dream would not be realised, but, coincidentally, the motor vehicle was proving its practicability, and Sidney Garcke took this up with enthusiasm. Forty years ago he launched the first provincial bus enterprise of the B.E.T. Group that was independent of a tramway system, and from 1912 onwards developed a system of local bus enterprises throughout a large part of the country. When the main-line railway companies secured their road transport Acts in 1928, the B.E.T. Group took a prominent part in the negotiations for the co-ordination of rail and road passenger services. As the result of lengthy conversations in which Sidney Garcke represented the road interests, arrangements were completed whereby the main-line railways were enabled to participate in the shareholdings of the provincial bus companies to an equal extent with the B.E.T. Group. With this work he set the seal on many achievements in organising the bus industry.

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Praise, Complaints, and Suggestions

The Pullman Car Company is placing in its cars a sheet of notepaper and envelope inviting suggestions. The notice reads:—

> "It is the earnest desire of this Company and our staff to provide the greatest possible comfort and pleasure in your travelling. If you think our service lacks anything in these respects we shall be very grateful for your comments and we will endeavour to implement any suggestions you care to make F. D. M. HARDING, General Manager."

This reminds us that prior to the war, instead of the customary notice that any complaints should be addressed to the Manager, the restaurant cars on the L.M.S.R. bore the following notice on their menu cards:—

> "It will be appreciated if patrons will report any unusual service or attention on the part of dining car attendants to Arthur Towle, Controller, L.M.S. Hotels Services, St. Pancras Chambers, Euston Road, London, N.W.1. This will enable the management to recognise exceptional efficiency, which they desire to encourage in their services."

This was a notice calculated to promote good service and benefit both the staff and passengers. Anyhow, under the Towle *régime* the restaurant car attendants on the L.M.S.R. were noted for their efficiency and courtesy. Since the war the notice has been somewhat modified, but the following still appears on the present day tariff on the restaurant cars operated by the former L.M.S.R. Hotels Services:—

> "It will be appreciated if passengers will report any unusual service or attention on the part of restaurant car staff to the Chief Hotels Superintendent, L.M.S. Hotel Services, St. Pancras Chambers, London, N.W.1."

It is to be hoped that the Hotels Executive will put this or a similar notice into general use on the restaurant cars of British Railways.

Iron and Steel Board Dissolution

The Iron & Steel Board, which was set up two years ago to supervise the industries development programme and to advise the Minister of Supply on price and similar policy was dissolved on October 1. On that date the appointments of the members came to an end, and although the Minister of Supply invited them to serve for a further year, all but the two trade union members refused. They pointed out that in the changed circumstances likely in their opinion to arise from the Government's proposals for bringing sections of the iron and steel industry under public ownership, they were not willing to continue on the Board after they had completed their work on the outstanding major problems on which they were engaged, and which they expected to be completed by the end of this year. The political implications of the decision by the non-trade union members of the Board are significant. It is assumed that the Government has failed to find any prominent persons connected with the industry to serve on the Board and willing to assist and encourage the Government to proceed with its plans for nationalisation.

* * * *

The Interpretation of the 25-Mile Radius

Considerable interest was taken in the hearing of the first application for specifying a fictional operating centre, on the lines discussed in our editorial article of September 24. The matter was heard by the Metropolitan Licensing Authority for Goods Vehicles on the application of a Luton firm which had its principal business in the transport of goods between Luton and London, Hayes (Middlesex), and Slough. Although such journeys were in excess of 25 miles, they could continue to be operated legally after the appointed day, within the terms of the 25-mile radius, if its centre were taken at London Colney. Accordingly, the applicant desired that point to be specified as the operating centre. In refusing this, the Licensing Authority said that application for a change of operating centre under Section 58 was left entirely to the discretion of the Licensing Authority, and there was no appeal against his decision. He was unwilling to grant an application which, in effect, authorised operations over the 25-mile limit, and felt that representations in such a case should be made to the British Transport Commission under Section 52 for a permit. In his view, the granting of such an application would have the effect of defeating the clear purpose of the Act, and the intention of Parliament in placing it on the statute book, and he was not willing to authorise an application which would achieve its objective by fixing a notional operating centre.

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French Railways Medical Service

One of the papers read at the International Congress of Industrial Medicine, which was held in London last month, described the medical service run by the S.N.C.F. for the benefit of its staff. For many years the French National Railways have attached great importance to medical work, and in our issue of April 11, 1947, we described the medical welfare train fitted out by the Northern Region, S.N.C.F., with which it is now possible to conduct systematic mass examinations of staff with a view to the prevention of tuberculosis. The author of the paper, Dr. Le Gô, Chief Medical Officer, Northern Region, said that the Northern Region alone had 363 medical officers and 94 specialists for a permanent staff of 63,000, and 16,000 assistants. Each of the Regions has its own service. Sections are grouped into districts, and the entire Region comprises 26 districts, each with a physician as head. Special attention is paid to apprentices and younger members of the staff. That there is a need for such a service can be gathered from the fact that in 1947 the number of days lost because of sickness and injury amounted to 1,003,864.

* * * *

Tourism and Dollars

The importance of the tourist industry as a source of hard currency is now widely recognised, and the fact was illustrated with a wealth of figures in a recent address to the Travel Association by Sir Frederick Ogilvie, who is a well known authority on tourism and the author of a standard work on the subject, "The Tourist Movement." Sir Frederick emphasised that the only sound economic policy for the United Kingdom is to increase material exports and to develop to the full "invisible exports" such as financial services, films, shipping, and the entertaining of foreign visitors, especially those from the dollar countries. He pointed out that even in 1938, tourist income to the United Kingdom amounted to nearly three-quarters of the value of British coal exports and more than twice the value of electrical goods exported in that year. In the 20-year period between the wars, travel was by far the biggest source of North American dollars available to Europe. Sir Frederick Ogilvie very commendably urged the Government to give the tourist, like other dollar-earning trades, the tools it needs for its job by allotting to it materials for the building of new hotels and by promoting a more imaginative and sympathetic outlook on foreign visitors and their ways. He might have added that the transport industry, and the railways in particular, have an essential part to play in making our overseas friends welcome and ensuring that their stay in our austerity-ridden island should be as comfortable and pleasant as humanly possible.

* * * *

Large Electric Locomotive Order from South Africa

A noteworthy contribution to the electric motive power requirements of South Africa is to be made by the North British Locomotive Co. Ltd. and the General Electric Co. Ltd., which are combining in the building of 40 3,000-h.p. mixed-traffic locomotives for service between Cape Town and Beaufort West. These machines correspond approximately in power to the present "3E" class of the S.A.R., which are of 2,800 h.p., but will differ from them mechanically in that there will be leading and trailing axles in addition to the two six-wheel motor bogies. From the description given in our October 1 issue of the electrical equipment, all of which is being supplied by the G.E.C., it will be seen that twelve economical running speeds will be provided by the use of three steps of field adjustment with the series, series-parallel, and parallel combinations of the six traction motors, and in this respect the locomotives will bear out the contention often put forward today in support of d.c. traction that improvements in motor design enable flexibility to be achieved without special and sometimes weighty control systems. It was argued recently by a French contributor to the *Bulletin of the International Railway Congress Association* that progress in d.c. motors should permit weak-field operation to be exploited still more thoroughly than at present, and a closer approach made to the range of running speeds with single-phase a.c. traction.

* * * *

A South African Train Heating Problem

Previous electric locomotive designs for the South African Railways have included a boiler for steam-heating the trains. Although this provision is not being made in the new North British-G.E.C. machines, other steps will be taken to meet heating requirements in accordance with recent trials of a new system in South Africa. It was found that the size of boiler in existing locomotives was too small for long journeys, and for some time heating vans with boilers stoked by an attendant have been attached to trains. More recently a special heating tender with large-capacity electrically-fired boilers has been tested, the practice being to couple it next to the locomotive so as to be under the supervision of the crew. It would seem that this method is to be adopted permanently for heating steam train stock when electrically hauled, since outlets are being provided on the new locomotives for providing a 110-V. supply to a heating tender. This vehicle has its own pantograph for current to the heaters, but needs a low-tension source for feed pumps, lighting, and other auxiliary services. At the present time, it is reported in *South African Railway News*, the experimental tender carries its own motor-generator set for this purpose.

* * * *

A Rotary Sand-Drying Furnace

In any re-equipping of locomotive running sheds which may be underaken by the Railway Executive in the future, consideration might be given to the possibilities of a rotary furnace for the drying and screening of locomotive sand. Such units have been developed in the U.S.A., and the Mines Equipment Company, of St. Louis, has produced a direct-heat plant said to be capable of preparing 2-3 tons of sand hourly. Wet

sand is fed in by screw conveyor from a hopper and passes into a rotating drum fitted with baffle plates; at the discharge end is a rotating screen and a firebrick-lined combustion chamber where the fuel (oil or gas) is ignited. Products of combustion pass against the incoming sand and are discharged at the hopper end. Thus untreated sand is warmed initially, and travels through increasingly hot zones until finally it is screened and discharged. There is a fall of about 8 in. in the furnace, which is about 13 ft. long and is driven by a 2-h.p. electric motor through 25/1 worm reduction gearing and a roller-chain drive. Heat may be supplied by a low-pressure oil burner and blower (the latter driven by a 1-h.p. motor), or by a high-pressure oil burner operating with compressed air, or by a gas burner.

* * * *

Control of Transport Efficiency

SIR WILLIAM WOOD'S primary concern in addressing the Metropolitan Section of the Institute of Transport on October 4 was to give some information in the broadest sense as to the fundamental principles and practices which should be adopted in keeping a check on the efficient and economical operation of large-scale undertakings. As might be expected in view of the author's long and intimate association with this branch of transport administration, he achieved this purpose both concisely, having regard to the scope of the subject, and with interesting illustrations of the main points he wished to make. Inevitably, however, in present circumstances the interest in Sir William Wood's paper was not confined to the more academic or theoretical aspects of his thesis; some of the sidelights of his paper have immediate and practical application to the problems of today. In view of his position as a Member of the British Transport Commission, he could hardly be expected to go further than the laying down of broad principles.

The service of transport falls naturally into two parts; regular services which cannot rapidly be varied in relation to demands, and services to meet demands only. As between the forms of transport, there is the further obvious difference that a railway, a dock, a canal and a tramway have practically constant costs for a large part of the machine they provide, whereas a lorry or bus service, broadly, is charged for its use of the roads by duties on its vehicles and fuel consumed. Sir William Wood's paper dealt with transport in general and not railways in particular, but it was inevitable that he should point out that these two distinctions overlap, and that the regularity of public services for both rail and road passenger traffic involves uneconomic working at times in the sense that the receipt for particular services do not cover out-of-pocket expenses. When services are curtailed on the road side, because of a lessening in traffic demand, there is a greater reduction of costs than in like circumstances on the rail side. The exact opposite applies to increased services to meet increased traffic where the rail vehicles exist, and even where they do not exist.

In view of the importance of the factor of fixed charges and variable costs on the perennial problem of effecting some reasonable balance of costs and charges between road and rail, particular interest attaches to a table which Sir William Wood included in his paper. He said that he had spent some time 20 or 25 years ago in examining this question of variable costs, and had come to the conclusion that, ignoring long-term changes, the fixed costs in Great Britain for all rail traffic, including interest on the capital employed, were 70 per cent. of the whole; a large rigid factor was the cost of the track. If, therefore, the cost of 100 units of traffic was £100, the cost of 80 or 120 was not £80 or £120, but—

	100 units	80 units	120 units
	£	£	£
Fixed charges	70	70	70
Variable charges	30	24	36
	100	94	106
Cost per unit	20s.	23s. 6d. +17½%	17s. 8d. −11⅔%

In other words, with a fall in traffic of 20 per cent. the cost per unit increased 17½ per cent., and with a rise in traffic of 20 per cent. the cost per unit fell 11⅔ per cent. These figures might well need to be modified a little if recalculated at the present time because of alterations in the ratio of the two parts, but the differences are sufficiently striking, and they have a direct bearing on the railway financial position at the present time, when traffics are shrinking.

Another example cited by Sir William Wood was the movement of coal and the raw materials for the heavy trades by the railways. Although there are more or less regular services for some such traffics, broadly they are served by trains which are run as may be acquired from day to day or from hour to hour, not unlike road haulage and bus travel outside the regular services. When these traffics diminish, there is a saving, although far from a full one, in the variable costs, and the reverse occurs if the traffic increases, but there is little appreciable variation in the other costs. That does not apply equally to regular passenger services, as a reduction in the number of passengers travelling does not necessarily result in reduced services. It is, in part, because of our recognition of the heavy incidence of non-variable charges in the railway financial structure that we have advocated the provision of "shorter trains and more of them."

In a reference specifically to road transport, Sir William Wood pointed out that the single vehicle of the road service not only has the great advantage of higher mobility but has a much greater proportion of variable costs than a railway train; consequently the operator can more quickly and more largely cut his costs to meet a lessened demand, particularly on the freight side. On the other hand, for a regular long-distance traffic "on a route unaffected by rain and other things which drop from the clouds," a series of lorries carrying 1,000 tons is at an economic disadvantage compared with its competitor on the railway line, but both have similar problems as to transhipment and distribution. For road passenger traffic the position is different because in large degree the bus runs to a scheduled service at specified times, but there is more scope for relief buses to meet extra demands or for reduced services to meet reduced demands.

* * * *

Mr. T. J. Hartigan

THE period of fifty-five years, during which Mr. T. J. Hartigan, C.M.G., who retired at the end of September from the position of Commissioner for Railways, New South Wales, has served the Railways Department, has seen considerable development in the Government-owned and operated railway system of that State. At the time he entered railway service its mileage was about 2,500, against rather over 6,000 miles today. Steam locomotive stock totalled about 520, against 1,155, and goods wagons numbered some 10,500, against nearly 25,000. Today a considerable route mileage around Sydney is electrically operated. Financially, the system, like most railways, has not always been prosperous, but Mr. Hartigan's last complete year of office as Commissioner was satisfactory from both operating and financial standpoints, showing a surplus of £111,585, compared with a loss of some £4½ million for 1932, the year he was appointed Commissioner. The following figures relate to the year ended June 30, 1948:—

	£	£
Earnings		36,905,862
Working expenses		31,014,667
Balance—profit on operations		5,891,195
Government contribution towards non-paying lines		800,000
		6,691,195
Interest	5,145,000	
Miscellaneous expenditure	1,434,610	
		6,579,610
Surplus after providing for all statutory debits		111,585

Mr. Hartigan, of whom a portrait and biography appear elsewhere in this issue, studied railway operation in Great Britain and elsewhere abroad in 1929 and 1935. During his term of office as Chief Accountant (from 1921 to 1928) he was responsible for much reorganisation in the accounting, auditing, and statistical work of his department. Mr. Hartigan's contribution to the welfare of the State of New South Wales was recognised by the award of the C.M.G. in 1936. Tributes to his department's work and co-operation in the recent war were paid by the Allied Command in the Pacific. During the war years Mr. Hartigan was also a member of the Australian War Railway Committee, of the Commonwealth Land Transport Board, and of the Munitions Board.

The 1948-49 Winter Train Service

AFTER the very eulogistic "hand-out" of the winter train service, reproduced on page 308 in our issue dated September 10, the real improvements are rather disappointing. The "new" features are for the most part restorations of trains cancelled in the coal crisis of the 1946-7 winter, or retentions of summer services which commenced on May 31 last, for all of which the public will be very grateful, but in a few cases, especially in the Scottish Region, the preliminary announcements were rather misleading. The "4.20 a.m. from Glasgow to Stirling" for instance "re-timed to leave at 4 a.m. and extended to Aberdeen" refers to an alteration made last May (duly noted in these columns), and the train in question has given a service to Aberdeen since the beginning of the century; while the "65 min. improvement of the Inverness to Euston night train," which starts at 5.35 instead of 4.30 p.m. but runs in its old path south of Kingussie, would have been more fairly described as "15 min.," as the train is 10 min. later into Euston, and there was always a departure available from Inverness at 5.10, by which through passengers joined the sleeping-car train at Aviemore, after its detour *via* Forres. Incidentally, the corresponding down train, 7.20 p.m. from Euston, is now timed 46 min. later into Inverness. This will not, however, affect passengers for the north and west, as, pending any alteration to the 8.30 p.m. Postal train from Euston and the 6.47 a.m. Highland mail from Perth, the late starts to the 10.30 and 10.40 a.m. from Inverness to Kyle of Lochalsh and to Wick, about which there has been correspondence, seem likely to continue.

Apart from a welcome increase in restaurant and buffet cars, a big extension of seat-reservation arrangements (the cost of which is still the pre-war 1s., despite increased charges in almost all other directions), and some badly-needed improvements in London suburban services during the "off-peak hours," where there has been considerable overcrowding, the "Tees-Tyne Pullman" and the "Norfolkman" are the principal novelties. The former is a shadow of the high-speed "Silver Jubilee," and runs between Newcastle and Kings Cross in 5 hr. 16 min. up and 5 hr. 20 min. down, calling only at Darlington, compared with the high-speed train's 4 hr. schedule. This is an improvement of 22 min. up and 27 min. down over existing ordinary trains, and the first class Pullman supplement between London and Newcastle is 10s., against a pre-war Pullman charge of 7s. 6d., and the "Silver Jubilee's" 5s. supplement. The "Queen of Scots" Pullman to Glasgow, restored on July 5 last, is continued for the winter, at first class supplements of 11s. to Edinburgh and 12s. to Glasgow, compared with 9s. pre-war from London to either place.

The "Norfolkman" is a valuable new service, at 10 a.m. from Liverpool Street to Norwich, returning at 5 p.m., which makes the 115 miles run in 2 hr. 20 min., calling only at Ipswich. This is a similar schedule to that of the "East Anglian" today, and 10 min. more than the pre-war timing. The other regular morning trains from London to Norwich at 8.15 and 10.3 a.m. (now 8.12 and 10.25) were always semi-fasts and took 2 hr. 56 min. and 2 hr. 57 min. for the journey in 1939, and a real express was badly needed, though we should have liked to see an earlier departure from Liverpool Street, breaking away from the 10 a.m. tradition and reaching Norwich in time for some business before lunch.

Elsewhere, the Eastern Region's timetable for the main line from Kings Cross, after the temporary dislocation of Anglo-Scottish services is over, books the "Flying Scotsman" to Edinburgh in 7 hr. 57 min. with Grantham and Newcastle stops (the up schedule is 7 hr. 55 min.), and alters the 1 p.m. from London to leave at 1.20 and takes 8¼ hr. instead of 8 hr. 32 min. to Edinburgh; the 1.45 p.m. up from Waverley is quickened by 5 min., and also becomes an 8¼-hr. train. The 1.10 p.m. from Kings Cross to Yorkshire is divided daily, and the first portion, at 1 p.m., reaches Leeds at 4.56, so that, with the two Pullman trains in 3 hr. 42 min. and 3 hr. 52 min., the average time on journey of the seven Kings Cross and Leeds expresses is now 4 hr. 13 min. down and 4 hr. 12 min. up, contrasted with the 4 hr. 53 min. down and 5 hr. 4 min. up average time advertised on the old "Midland" route. The Marylebone services are unchanged, apart from small accelerations, such as the 8 min. earlier arrival in London of the 2.20 p.m. from Manchester.

The honours of the winter timetable rest, on the whole, with the Western Region, where two bad gaps in the train service have been filled by the daily running of the 11.15 a.m. and 1.15 p.m. from Paddington to Bristol (hitherto Saturdays only and Monday, Friday and Saturday trains), and by the restoration of the 11.45 a.m. to Worcester, non-stop to Oxford in 72 min., which commenced to run in May, 1946, but became a coal-crisis casualty early in 1947, and corresponds to the pre-war 12.45 p.m. The heavily-loaded 6.5 p.m. to Oxford and Worcester now leaves at 6.45 and reaches Worcester at 9.30, preceded by a train at 6.5 which terminates at Kingham, and balanced by a new 7.45 a.m. up from Worcester to Paddington in 2¾ hr., forming the 9.10 from Oxford. The 12 noon from Bristol runs up non-stop from Bath, and is in London at 2.20 instead of 2.40 p.m., but the time allowed from Bath to Paddington by the three principal expresses (9 a.m., 12 noon, and 4.15 p.m. from Bristol) seems rather excessive, in view of the faster bookings over the harder Westbury road and the commercial importance of the Bristol and London service.

To the West of England the pre-war 3.30 p.m. from Paddington to Penzance is restored, giving well-spaced departures from London at 1.30, 3.30, and 5.30 p.m. The last-named train is the 4.30 of last summer, and both the 3.30 and 5.30 reach Plymouth in 4½ hr., stopping at Taunton and Exeter; the "Limited," now accelerated 10 min. in each direction, has a similar 4½ hr. timing to Plymouth, with only one advertised stop. This makes a liberal service of six down expresses *via* Westbury, as the 11 a.m. from Paddington to Plymouth is retained for the winter, and the up trains are virtually unaltered. On the Birmingham line the 9 a.m. from Paddington and 4.25 p.m. from Wolverhampton become daily instead of Mondays Only trains, and there is a new morning and evening residential service worked by a diesel between Porthcawl and Swansea over the Pyle West loop.

The London Midland alterations are principally on the old Midland division, where the 2 p.m. from St. Pancras to Bradford, withdrawn in February, 1947, re-appears, filling the long interval with no train to Nottingham and Sheffield between the 12.15 and 3.20 p.m. from Marylebone, and is balanced by the 9.3 a.m. from Sheffield to St. Pancras *via* Nottingham. Substantial improvements are made in the service between Birmingham and the North Eastern Region. A new 8.5 a.m. runs from Birmingham to Newcastle in 5 hr., returning at 4.5 p.m. (where it will be a valuable relief as far as York to the heavily-loaded 1.45 p.m. from Edinburgh), and connecting at Birmingham with the 5.20 p.m. Leeds to Bristol. The other alteration is particularly gratifying in view of the criticisms of cross-country connections, for the 8.5 a.m. restaurant car train from Newcastle has at last been speeded up to arrive at Bristol at 3.20 instead of 4.10 p.m., and connects with the 9.25 a.m. from Liverpool (Lime Street) to Penzance, leaving Bristol at 3.35. This, we venture to hope, marks the beginning of a real overhaul of cross-country connections at what used to be frontier stations, where there might now be a big increase in through working at no additional cost.

There are still no improvements between St. Pancras and Manchester, but some "through carriages" between Nottingham and Sheffield and Liverpool over the Cheshire Lines are re-instated. The Cheshire Lines Manchester and Liverpool service now contains one 45 min. non-stop train each way, though the regular hourly expresses are still advertised to take around 55 min. for the journey, with Warrington and Farnworth stops.

Elsewhere on the London Midland Region, the afternoon service from Lancashire to Scotland, leaving Preston at 3 p.m., reappears, though the corresponding 2 p.m. from Glasgow to Liverpool and Manchester is still missing; the 8.55 a.m. from Perth to Euston resumes its pre-war stop at Preston, but its connections at Crewe to Birmingham and Bristol are not restored; and the 1.15 p.m. from Glasgow to Euston has its Lancaster stop reinstated, the London arrival becoming 10.10 instead of 10 p.m.

The Manchester and Birmingham service is improved by advertising the arrival at Birmingham (somewhat unkindly deleted from the summer time-table) of the "Pines Express" to Bournemouth, now equipped again with a restaurant car. This gives a morning train from Manchester to Birmingham in 2 hr. 12 min., and a 2 hr. 10 min. return from New Street, and by a slight alteration at midday a service is given from Manchester to Birmingham *via* Stoke at 12.40 in 2 hr. 56 min.,

with a return from Birmingham at 3.50 p.m. in similar journey time. The 11.30 a.m. from Leeds to Liverpool (a coal crisis withdrawal) is restored, leaving at 11.25 and without its previous 9 a.m. working from Newcastle, and on its return at 2.15 from Liverpool (Lime Street) provides an unexpected 42 min. train from Liverpool to Manchester, with a stop at Earlestown.

The Southern Region's winter services to Bournemouth and the West of England are almost unchanged. The "Devon Belle" is withdrawn at the end of October, and the "Bournemouth Belle" runs at its 2 hr. 10 min. down and 2 hr. 5 min. up schedule of last May. To Hastings, Folkestone, etc., there are no material improvements, though a 3.10 p.m. summer train from Hastings to Charing Cross is continued for winter, and the Kent coast trains retain their leisurely schedules despite the more powerful locomotives now available to work them. The "Thanet Belle" has vanished as an all-Pullman train, but first and third class Pullmans run in the 11.35 a.m. from Victoria, a 2¼ hr. service to Ramsgate, and return in the "Belle" timing at 5.5 p.m., which is now an "ordinary" service, arriving at Victoria at 7.7 p.m.

The list of restored cross-country through trains is excellent, especially in a winter timetable. The Brighton and Margate to Birkenhead train *via* Redhill and Reading reappears as a daily service; the 11 a.m. Brighton to Cardiff, the 9.30 a.m. from Bournemouth to Birkenhead *via* Oxford, and the 10.30 a.m. from Bournemouth to the old "Great Central" line *via* Banbury and Woodford, all run daily instead of on Fridays and Saturdays, and all have restaurant cars, though the Bournemouth-Birkenhead train has no portion for Manchester, and York—not Newcastle—is the northern terminus of the "Great Central" service. An unexpected restoration is that of the Liverpool (Central) and Harwich train—at present running to and from Colchester only—leaving Liverpool at 2 p.m. and getting back there at 3.25 p.m. (not 3.20, as in the preliminary notices), so that we have once again the curious spectacle of expresses leaving Liverpool for Manchester by the three routes at 2, 2.15, 2.30, and 2.30 p.m.!

On the Scottish Region, the pre-war sleeping-car service given by the 10.55 (now 10.50) p.m. from Euston to Perth has been restored by a new 5.40 a.m. train from Carlisle to Perth. But the Perth arrival is 9.30 instead of 9.11, so that passengers from the south miss the 9.20 from Perth to Aberdeen as well as the 9.38, altered to 9.25, for the Highland section. There is, however, a concession to Forfar passengers from England by the working of a sleeping-car portion off the 7.30 p.m. from Euston forward from Perth to Forfar at 6.21 a.m., returning from Forfar at 6.55 p.m. to form part of the 8.15 from Perth to Euston. The 1 p.m. from Euston is shown to arrive at Glasgow at 9.50 instead of 10.5 p.m., still leaving Carlisle at 7.27; Glasgow and Aberdeen services are unaltered; but there are quickenings between Edinburgh and Aberdeen of 5, 5, 7, 1, and 12 min. northbound, and of 10, 12, 6, 19, and 4 min. coming south. The through service from Kings Cross to Aberdeen is now on the 10.5 a.m., not the "Flying Scotsman," from London, due at Waverley at 6.38 p.m., the Aberdeen train leaving at 7.5. None of the important connections broken at Edinburgh and elsewhere is restored, nor is the 4.4 a.m. from Edinburgh to Perth reinstated.

The principal improvement in the Scottish Region is really in the service between Edinburgh (Waverley) and Glasgow (Queen Street), where, subject to some variations for through trains from and to the south, regular hourly departures operate from each end, most of the trains making the journey in 70 min. or less. This is a revision long advocated in these columns, and apparently the extra traffic passing between the two cities since the setting-up of Regional headquarters in Glasgow has now justified the extra mileage needed to carry it out without reference to the service over the old "Caledonian" route, which has not been brought into the scheme. But the "acceleration of passenger services in general in the Scottish Region," foreshadowed in notices to the press, is not yet apparent.

A map has now been included in the London Midland timetable, but not in the "Murray" book of the Scottish Region, which seems to have adopted permanently the geographical regrouping of services inaugurated on May 31 last, and now uses most of the abbreviations—TC, SC, RC, etc.—which are familiar elsewhere. It is a pity, therefore, that *Bradshaw* where all the late L.N.E. lines, including the "Great North," follow immediately after the Newcastle-Edinburgh main-line tables, with the old Caledonian, Highland, and Glasgow & South Western services at the end of the book, has not adopted the more logical "Murray" plan. Uniformity in these cases is very desirable, and *Bradshaw*, in its presentation of Southern Region train services, still prints the Western, Central, and Eastern Sections in reverse order to their appearance in the Southern Region's own book.

* * * *

British Transport Commission's Staff

THE July issue of *Transport Statistics*, of which we give some details elsewhere in accordance with our usual practice, shows the British Transport Commission's staff as numbering 807,159. This represents an increase of 1,322 during the July period, but the inclusion of the Railway Clearing House staff for the first time accounts for 978 persons. The total excludes staff employed by the Road Transport Executive and is divided into four classes as set out below:—

Administrative	90,177
Operating	431,620
Maintenance & Construction	252,633
Others	32,729
Total	807,159

This large number of employees was distributed over the following seven branches of work:—

Commission's Head Office	135
British Railways	663,009
Steamships, marine & docks	20,722
London Transport	100,774
Inland Waterways	5,168
Hotels & Catering	16,373
Railway Clearing House	978
Total	807,159

A note states that the four categories of staff are "broadly consistent as between the different activities shown, except that in the case of British Railways the administrative category includes all clerical grades, some of which may properly be considered as operating staff."

The table of British Railways staff first puts 80,439 persons, of whom 22,251 are women, under the heading "Administrative, Technical, and Clerical." It then has a separate heading "Operating: Salaried," for 17,860 stationmasters, yardmasters, goods agents, inspectors, foremen, supervisors and traffic controllers. Obviously these are the key men on whom the movement of traffic depends and occupy more responsible posts than thousands of the staff included in the first group. The heading "operating" is used to cover the staff of both the operating and commercial superintendents. We cannot help feeling that a different method of classifying railway staff might be devised which would preserve a useful departmental distinction.

The only other comment we have to make on the rearranged tables is that they do not indicate the total staff of British Railways. It would have been helpful to know how many of the 20,722 Steamships, Marine & Dock staff were working for the Railway Executive. Neither is there any note to explain the difference between the 16,373 Hotels & Catering staff and the 13,466 Hotels & Refreshment Room staff who were employed by British Railways in June. We hope that later issues of *Transport Statistics* will make the position clear because it is rather disconcerting to find that the staff of British Railways has fallen from 700,963 in June to 663,009, if the headings of the tables are taken literally.

SCOTTISH UNIVERSITY COURSES.—In connection with University courses for Scottish railwaymen, lectures on subjects associated with railway practice have been arranged at Aberdeen, Edinburgh and Glasgow Universities, and at University College, Dundee. Subjects range from law relating to the conveyance of goods and passengers by rail, to railway economics, economic geography and railway operation; students attending the courses are required to pay only nominal fees. At various centres throughout the Scottish Region, evening education facilities are available to the staff during the winter months, and the classes, which are free, deal with block telegraph signalling, goods and passenger station working and accounts, and first aid.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Transport Statistics

British Transport Commission,
55, Broadway, London, S.W.1. September 29

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—With reference to the article in *The Railway Gazette* dated September 24, 1948, on "Transport Statistics," no new method has been adopted for computing figures of loaded wagons forwarded. In adopting the figures published by us in periods 4, 5, and 6 (we published none in periods 1, 2, and 3), we have simply reverted to the basis that was adopted for publication before the war. This meant, however, departing from the wartime practice of publishing Freight Rolling Stock Central Control figures, but we chose the course we have adopted because the series we are now publishing are, in fact, the statistics that have always been used for calculating the average wagon load at starting point, even during the war period.

There has been no change, therefore, in the basis of computing the figures of average wagon load at starting point. Continuity has been preserved, and the figures are strictly comparable throughout. The differences referred to by *The Railway Gazette* are genuine, and not paper, differences. That there should be an increased average load in 1948 compared with 1946 is not really "unlikely," owing to changes in the traffic passing. There is also the further point that there is now a greater number of higher capacity wagons.

When publication of annual statistics was resumed in 1942, F.R.S.C.C. figures were used instead of the series used for publication before the war, even though the latter were available in the railway companies. But the F.R.S.C.C. figures were never used as a means of calculating the average wagon load at starting point. But *The Railway Gazette* may perhaps be pardoned for falling into the trap, because the F.R.S.C.C. figures were incorrectly given the same description as the pre-war series. Strictly, however, the F.R.S.C.C. figures do not relate to loaded wagons forwarded, but to movements (*i.e.*, forwardings plus transhipments) of loaded railway-owned and railway-controlled wagons. As such, they are not suitable statistics for calculating average wagon load at starting point.

The Railway Gazette article appears to have been prompted by an error made by the Ministry and the Central Statistical Office in publishing the figures for Period 6 in the *Statistical Digest*. When our figures of loaded wagons forwarded were published for April, it was agreed by Ministry and Central Statistical Office that our series would be adopted in future. Through some oversight, however, the Ministry appears to have given the Central Statistical Office the wrong (*i.e.*, F.R.S.C.C.) figure for June. It is understood that the question of correction in the *Digest* is under consideration.

Yours faithfully,

J. H. BREBNER
Chief Public Relations & Publicity Officer

[We are obliged to Mr. J. H. Brebner for explaining the discrepancy between the figures published in *Transport Statistics* and in the *Digest*. It is reassuring to know that the continuity of important statistics is being preserved.—ED., *R.G.*]

Continuous Brakes on Freight Trains

76, Elgin Crescent,
London, W.11. September 16

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Mr. G. Richard Parkes in his letter on continuous brakes for freight trains, published in your issue of September 10, mentions the American law of 1893 and the achievement of Japan, where 55,000 wagons were converted to the automatic coupler in 24 hours. Unfortunately, both events are irrelevant for the problem of the automatic coupler in Europe.

This problem, so often overlooked, is not the adoption of the automatic coupler in place of the non-automatic device. That is a simple question of design. The European problem is the problem of the conversion from side buffers to a central buffer coupling with its different stress distribution made particularly difficult by the two-axle wagon with its great overhang. Once this question is solved, everything else is a routine job. Many such designs have been suggested, but, as far as I know, not one of them was practicable.

It has always to be borne in mind that America, Japan, and other countries had central buffers and bogie cars. This, incidentally, also made it easier to pass the law in 1893, because of the great danger of a non-automatic central-buffer coupling for heavy traffic. The number of accidents to shunters in the U.S.A. was then continuously increasing.

Furthermore, it is only a matter of proper timing to have all central-buffer cars gradually equipped with an automatic coupler, and in addition an intermediate coupling-piece for non-automatic use. On the day the last car is equipped with the automatic coupler, the order is given to remove from all cars during the night, when the cars enter the yards, the intermediate coupling pieces, so that the conversion to automatic coupling may, in fact, be carried out in 24 hours.

Unfortunately, to repeat my first statement, the European cars—except some special systems or special trains here in England or, say, in Germany the coal trains composed of twenty 50-ton high-capacity cars equipped with the automatic Scharfenburg coupler—have not yet been converted to a non-automatic central buffer coupling.

Yours faithfully,

W. JACOBSOHN

Locomotive Fuel Economy

16, Glenmore Road,
London, N.W.3. September 21

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Many thanks for the copy of your current issue containing my recent letter on "Locomotive Fuel Economy." There is a minor error in printing, therein: the decimal point has been omitted before the efficiency figures, ·132, etc., but no doubt your readers will have understood and allowed for this omission.

Yours faithfully,

R. OPIE

390, Wakefield Road,
Huddersfield. September 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—There is a self-invalidating feature in Mr. Opie's deduction from the figures given in his letter in your September 17 issue. He says, using the figures 145/132, that a pressure of 225 lb. per sq. in. gives about 10 per cent. higher efficiency than 180 lb., "other things being equal." But, on his own showing, other things are *not* equal, as the corresponding expansion ratios are 5·1 and 4·2, and, whatever the initial pressure, the higher ratio gives an efficiency about 10 per cent. higher than the other. Throughout the range of figures given the relative efficiencies are proportional to $1 - (1/R)^{0.3}$ and are thus determined by expansion ratio alone. The figures given are consistent with the principle that at any particular expansion ratio cylinder efficiency is the same for all initial pressures.

Mr. Opie makes a similar error in his attempted comparison between the "Castle" and the "Horwich 4-6-0." The former is "an exceptionally efficient design in every detail," whereas the latter had detail defects that badly affected efficiency, and so, other things *not* being equal, the difference between observed efficiencies cannot be ascribed to difference in boiler pressure. Even apart from this, the published results give no information on the influence of boiler pressure on efficiency unless it be established, among other things, that the engines were working at equal expansion ratios.

Yours faithfully,

W. A. TUPLIN, D.SC., M.I.MECH.E.

"Train Reforms"

13, Mount Park Road,
Ealing. September 28

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I am a retired railway man of nearly 50 years happy service under "Private Enterprise"; from what I have seen and heard I am not at all favourably impressed by the new *régime*. Nevertheless, in fairness, I cannot let the letter from Captain John E. Crowder, M.P., under the heading "Train Reforms," which recently appeared in *The Daily Telegraph*, pass unchallenged. It read as follows: "The Railway Executive seem to be busy experimenting with different colours for various locomotives and trains. I would suggest that the Executive give more attention to providing clean wash basins on the corridor trains and better and more appetising meals in their restaurant cars, especially on the 'Cornish Riviera Express.'"

I recently journeyed to Cornwall and back on the "Cornish Riviera Express." There was a female attendant, neatly attired in blue overalls and cap, continually patrolling the train in an endeavour to keep the lavatories clean. My wife used the lavatory immediately after it had received attention and found it spotlessly clean. I used it about 20 minutes later, before the woman had time to come round again, and

found it in a disgusting condition, because of the filthy habits of certain members of the travelling public. I was not surprised, as during the thousands of miles I travelled while on duty, there was always a section of the public which had no regard for other people's convenience or property. Apparently they are no better now that the railways are "their own."

As to the meals, this is a matter of luck. On my downward journey they happened to be using the meagre allowance of meat granted them by the Food Controller, and the meal was excellent. On the return journey this had all been used and the chef had to do his best with fish, left overs, and so on, and the result was no more appetising than that which the average housewife can produce on about the fourth day of the week. After all, it is still a little difficult to "make bricks without straw."

The charge of four shillings for the second meal was far too much, but I gather that the price is not governed so much by the cost of commodities as by the wages, overtime, Sunday duty, overall duty pay, and so on, which now has to be paid consequent on the findings of Mr. Bevin's catering wages boards.

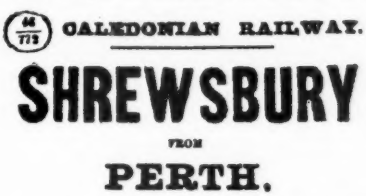
Yours faithfully,
RETIRED

A Link with the Past

4, The Schools,
Shrewsbury. September 5

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I enclose a label which it may interest you to see. It was put on my luggage at Perth last week, and it struck me that your readers might be interested to hear of a Caledonian



label still being used in the ordinary way of business in 1948. But perhaps such a thing is commoner than I know.

May I say how much I enjoy your associated publication *The Railway Magazine*, of which I have been a reader since about 1915. I have all the volumes since 1919, and they are well worn by the hands of boys in this school, who borrow them very often.

Yours truly,
D. S. COLMAN

The Distant Signal

The Old Manor,
Salisbury. September 10

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—For the moment I do not see what Mr. E. R. B. (Erb!) Roberts has in mind, or what he is boggling at, in your September 10 issue. Since a distant signal itself does not give a danger indication it cannot be passed at danger, and no anachronism occurs. A stop signal can be put as far out as circumstances require; to see it and start braking a mile before reaching it is another matter. How often can this be done?

There are several cases round here. In one case there is a tunnel (500 yards odd) and a curve between home and starter. In two others there is a curve of shortest possible radius, 90 deg. at centre, right on to the starter, first sight perhaps 200 yards. Without a distant these would have to be approached at 5 to 10 m.p.h. at the most. In yet another case the outer home is inconspicuous at the bottom of a steep bank with the inner home round a curve. The distant is a mile or so out, before reaching the top of the bank; the descent of the bank is governed by the indication of the distant.

If a distant is "off," then all other signals are also "off" at the moment, and only in a case of great emergency would they be altered. If it is at caution, then a driver must be prepared to stop at any of the subsequent signals although he may find that they have been cleared when he reaches them. An express driver, in particular, as the editorial note suggests, drives largely on the distant.

Prior to 1923, many of the old companies dealt with the same problems in different ways. Since grouping, and again since nationalisation, many of the old arrangements have come up, and are coming up, for replacement: hence the I.R.S.E's continual research for simplification and standardisation. Just where does Mr. Roberts expect "high officials" to consider matters? Does it not occur to him that practical people with expert knowledge exist and function? He says that in this country, and maybe in some others, the distant is not a "stop" signal; would it not be nearer the truth to say that a distant is never a "stop" in any country? My (if amateur) interest extends over an odd 40 years, and I have never heard of one yet. Could he tell me of some?

Yours faithfully,
COURTENAY BARRY

Livery of British Railways

The Hermitage,
Magor, Mon. September 18

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The Publicity Officer of the Railway Executive recently reminded the public through the press that any criticism of the trial colours must be made before the end of this month.

How can people of South Wales do this when the only "new colour" train to come west of the Severn Tunnel is the 8.55 a.m. *ex* Padd. each day with light green engine and cream and chocolate coaches?

Where are the black and blue engines and the spilt milk and grey coaches?

Yours faithfully,
G. A. JENNINGS

Speed Control Signalling

102, Cardinal Road, Eastcote,
Ruislip, Middlesex. September 28

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The very interesting letter by Mr. W. F. Barton, published in the September 17 issue, must have been studied by now by a number of signalling experts, many with their own ideas of speed control signalling. As a person with an interest in this type of signalling I would like to add a few comments.

The ideal type of signalling from the operating department's point of view is that which permits them to carry the maximum number of passengers with comfort at a reasonable speed in the shortest time. With acceleration of 1·5 m.p.h. per sec. and the deceleration of 2·6 m.p.h. per sec. for level tangent track, the speed at which maximum trains per hr. can be signalled safely through is approximately 22 m.p.h., the signalling for above-mentioned stock would be based therefore on a 22 m.p.h. approach speed.

Having decided our stock characteristics and the speed of approaching trains, we now can plot our signal positions. The speed of the outgoing train being the same average (22 m.p.h.) over the vital station tracks, ensures an even signal spacing and sighting distance. The minimum sighting distance of each signal must be equal to the service braking distance, so that drivers can bring their trains to rest at a signal, should that signal fail to clear.

The introduction of blind train stops reduces the sighting distance and consequently the headway, but should the train just beat the time section, the emergency brake will be applied without warning and passengers subjected to an uncomfortable few seconds, an undesirable feature.

With lower incoming speeds the headway is increased because of the difference of train speeds (incoming to outgoing). It is, in my opinion, detrimental to encourage lower run-in speeds than 20 m.p.h.; from experience it has been found that to reduce the driver's speed when near to a station causes him to coast into a station at the low speed, thereby failing to accelerate as the sighting distance increases.

A train held at a signal with overlap good for 23 m.p.h. approximately 250 ft. from station, will accelerate and arrive in the station approximately one sec. later than the train brought in closer to station with a 5 m.p.h. speed restriction. The extra expense of installation and maintenance of four extra signals with their time sections does not justify itself.

Speed control should be brought into commission only when the second train has passed over the time section with the outer home signal to which it applies at danger. Should the first train leave the station and the outer home signal clear normally, the driver of the second train should be given a sign to indicate that the speed control is terminated and he can accelerate as for normal run-in. The signals then will clear on the normal overlaps, and the run-in time be reduced.

For a 370 ft. train with acceleration of 1·5 m.p.h. per sec. and 2·6 m.p.h. per sec. deceleration, the headway would be approximately 42 secs. without station stop, and with a 530 ft. train the comparable headway would be approximately 47 sec.; these are based on 20 m.p.h. run-in with overlaps calculated for maximum speeds after passing through time sections.

Yours faithfully,
B. O. BANKS

The Scrap Heap

N.U.R. and Tyne-Tees Pullman

Newcastle No. 2 Branch of the National Union of Railwaymen will on Friday discuss a resolution passed by another Newcastle Branch that the Tyne-Tees Pullman train, which they say is a luxury out of place on a nationalised railway, should be withdrawn.

* * *

Hump Shunting?

It is claimed in Larkana, in the province of Sind, Pakistan, that for the first time in history, a camel has been responsible for the derailment of a train. The accident occurred to a down Quetta Mail eight miles from Jacobabad Station. Hearing the engine roar, the camel, standing on the line, took fright and ran ahead along the track for five miles until exhausted. The train ran over the camel and was derailed.

* * *

More Civil Servants

A statement showing the civil staffs employed in Government departments, published recently (Cmd. 7522, Stationery Office, 1d.), shows that 21,879 more civil servants were employed on July 1 this year than on April 1, and 35,137 more than on January 1. The increase on the April figures is principally due to a seasonal addition to the staff of the Ministry of Food, needed for the annual exchange of ration books, amounting to 10,526, and an increase of 10,833 in the Ministry of National Insurance, required for staffing local and regional offices for operating the National Insurance Services from July 5. This number includes about 4,000 who had been engaged on National Health Insurance and other work.

* * *

Royal Engineers Recruiting Poster

The illustration below is a reproduction of the very effective new recruiting poster for the R.E. (Tn.) Supplementary Reserve.

The poster made its first public appearance on "open day" at Longmoor on September 15, and is now being distributed to the Railway Executive and other transport organisations.

Waterloo Promenades

In a series of interviews at Waterloo Station recently, over 700 passengers aged between 14 and over 70 were asked to say if they liked the musical broadcasts over the station loudspeakers. The interviews took place between 4.45 p.m. and 6.30 p.m., and of the 714 passengers who were questioned, 632 were in favour of the music. Most passengers requested something lively in the morning but preferred softer and more soothing music on the way home.

* * *

100 YEARS AGO

From The Railway Times, *Oct.* 7, 1848

The First and only Railway in Russia (from St. Petersburgh to Parvalowsky).—This line of railway is a miserable specimen, though American engineers constructed it. The rails are so uneven that the carriages think nothing of eloping from the line and walking into adjoining meadows; and the pace is not alarmingly frightful, for we are forty-five minutes traversing ten miles. You receive a ticket, which appoints a particular seat in a particular carriage of a particular train, at your disposal; and if you light a cigar, Government provides you gratuitously with a safe escort to the frontier,—a useful and economical mode of travelling in case of bankruptcy. * * * After one of the late accidents on this line, the Emperor was the first person to venture on it again, to show his subjects the folly of being alarmed. This was necessary, for travelling by rail being new, a panic might have deterred passengers from risking their lives on it again.

* * *

British Output

Hansard reports Mr. Douglas Jay, Economic Secretary to the Treasury, as having said in the House of Commons on September 16: "*The Economist* told us the other day that the British wage-earner by one hour's work was earning more food than any other wage-earner in the world." This is a misquotation of what was written in *The Economist*—so serious that it contrives to convey exactly the opposite intention. What we wrote on August 14 was that "a pound of meat, a pound of butter, a pound of bread, costs the British wage-earner less, in terms of hours of work, than it costs almost any other wage-earner in the world—including those of most of the food-producing countries." This occurred in the course of an argument in favour of "rationing by the purse," and the reference was, of course, to the economic absurdity of the food subsidy policy. The moral was the lowness of British prices, not the highness of British output. The British wage-earner does not earn more food in an hour's work than other countries' wage-earners. For the fact that he gets it so cheaply, relatively to his own efforts, he should thank the United States, Canadian, and British taxpayers.—*From "The Economist."*

* * *

Sunday Working

Apropos of the recent resolution made by the Methodist Synod of Derbyshire protesting against the revival of Sunday railway excursions by British Railways, it is not without interest to note that an agitation against Sunday working was made as far back as February 23, 1839.

The following is a copy of a letter addressed to H. Patteson, Esq., Secretary to the North Midland Railway Company, George Street, Mansion House, London.

"Sir,—I have the honour to acknowledge your very courteous reply to a letter addressed by me to Mr. Newton of Derby and laid before a Board of the North Midland Railway Company on the 12th instant. The Company are so kind as to express 'an earnest wish to effect the object in view by any exertions they can make,' that object being to prevent the present desecration of the Lord's Day. May I therefore be allowed to suggest a simple but efficient remedy by which without any trouble or expense this may be done? It is this—on many parts of the line, at least certainly those to which I now refer, policemen are appointed, who might be instructed to lay information before a Magistrate whenever any work not *absolutely* necessary was done on the Sunday, and the Contractors warned that such steps would be taken. I feel satisfied if this was done, all ground of complaint would be removed, which would be most desirable for all parties.

I remain Sir,

Your most obed. servant,

R. M. Hope

Duffield Bank, near Derby.
Saturday, Feb. 23, 1839."

* * *

Alarm and Despondency

I bought some holiday tickets in advance at one of our main-line local stations recently, and the booking clerk asked whether I required insurance cover for the journey. To my question "Why?" he replied; "Well, you never know, with the permanent way in the state it is."—*Mr. E. Winstanley in a letter to "The Daily Mail."*

* * *

Too Dear To Go

Sir Cyril Hurcomb is Chairman of the Transport Commission which runs Britain's nationalised railways. Speaking at Crewe, he said: "The railways have got a tough battle to increase traffic, and it can only be done by reducing costs and increasing efficiency. Whether we like it or not, we are not holding the passenger traffic, and the result this summer has been very disappointing." . . .

There is a limit to which the public can be squeezed in subsidisation of high costs, and here and there that limit is being reached ominously.

How can the inflexibility of a nationalised industry or service cope with a problem like this? . . .

Too easily the State, when it has a monopoly in a necessary service, takes the easy way out. Costs going up? Very well, raise the price to the consumer.

The unexpressed assumption here is that the public will have to pay the piper anyway, since they "can't do without" the commodity or facility.

Can't they?

Times change. We used to be asked on the railway hoardings, "Is your journey really necessary?" Now we know that if our journey isn't really necessary most of us can't afford to make it.

Some railway workers are urging that fares should go up yet again. Here are four third class monthly return fares from London:

To Manchester	£2	10	0
To Taunton	£1	19	0
To Swanage	£1	15	9
To Berwick-on-Tweed	£4	12	0

Those who believe nationalisation to be a costly way of running things could be pardoned if they suggested that our socialised railways provide travel only for the rich and privileged.

But that is not the kind of point we wish to make. Costs were rising all right before the lines were nationalised. The trouble is they are still rising and it is a process that must somehow be stopped.—*From "The Evening News."*

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

NEW ZEALAND

Special Train for Royal Tour

For the royal tour of New Zealand next year two well-appointed coaches which were constructed in New Zealand for the tour of the Duke of Gloucester in 1934, will be used. Since then, one of these vehicles has been retained in each island for viceregal use, and the North Island coach is to be shipped to the South Island. Though built 14 years ago, the coaches will require only slight internal modification to enable them to fulfil their new role. A dining saloon car which at present forms part of the viceregal suite in the North Island, but which recently has been seldom used, will complete the royal suite.

The special train will comprise 12 vehicles; in addition to the three royal coaches, there will be a coach for the cabinet minister in attendance, one for the manager of the tour and his officers, a sleeping car for members of the royal entourage, and one for the Commissioner of Police, Scotland Yard officials and executives of the post and telegraph, and broadcasting departments. The general manager of railways, with other senior railway officers responsible for the operation of the train, will travel in a coach conveniently near the locomotives. Two cars will provide sleeping accommodation for the train crew and catering staff, and another three vehicles will be used as dining, kitchen, and baggage cars. The royal train will be hauled by two "Ja" class locomotives.

PAKISTAN

Indo-Pakistan Wagon Pool

The Indian railway broad gauge wagon pool is one of the institutions which have survived the partition of the country. The North Western Railway, the major broad gauge system in Pakistan, has not only been an active partner in the pool but has also continued to be a member of the Indian Railway Conference Association, whose general secretary is ex-officio director of the pool. From the date of partition to January 7, 1948, the number of N.W.R. wagons in use on Indian Railways ranged between 4,030 and 7,254. The undivided North Western Railway had 28,584 broad-gauge wagons on March 31, 1946.

During the months following partition, the N.W.R. was able to spare wagons in large numbers for Indian Railways because its own traffic demands were low. Since January, 1948, traffic has gradually developed, and the N.W.R. contribution to the wagon pool has decreased correspondingly, having been reduced to 5,000 wagons in that month. From March 30 this contribution was reduced to 4,000 wagons and again reduced to 3,500 from April 23 in anticipation of the N.W.R's own requirement of additional wagons for moving the new wheat crop.

Another proof of the unhindered working of the Indo-Pakistan wagon pool is the interchange of goods traffic in substantial quantities between the North Western Railway and its contiguous Indian system, the Eastern Punjab Railway. During the last six months, these two systems have exchanged 5,000 to 7,000 wagons a month. In spite of the setting-up of Customs barriers from March 1, there is no serious break in this two-way flow, except that brought about by the occasional hold-ups at the three working points of interchange, namely Atari (between Lahore and Amritsar), Abohar (between McLeod Ganj Road and Bhatinda), and Ferozepore City caused by the failure of consignors and consignees to pay the Customs levy.

Towards the end of May, the Eastern Punjab Railway was unable to accept all wagons loaded on N.W.R. for stations in India. As a result, a large number of such wagons accumulated at stations near the Pakistan boundary. To avoid further congestion, the N.W.R. was obliged to impose restriction on the booking of traffic to Indian Railways, salt and petroleum, however, being exempt in view of India's need for them. The Eastern Punjab Railway had for the same reason also to stop booking to the North Western with effect from June 19, coal and perishables being exempt. As the position eased on both sides of the border in the beginning of July, booking of inter-dominion traffic was resumed by both railways. The commodities which usually cross the border, apart from those previously mentioned, are sugar, tea, tobacco, cigarettes, and cotton piecegoods from India to Pakistan, and cement, cotton, cotton seeds, and dried fruits from Pakistan to India.

UNITED STATES

Freight Rate Increases Sought

It was stated by traffic executives of the railways after recent conferences that American railway companies will seek another 8 per cent. increase in freight rates, with a smaller increase on some excepted commodities. The chairman of the Western Traffic Executives' Committee said that current freight rates were not producing sufficient revenue.

VICTORIA

Developments in Melbourne District

The Ashburton branch, served by electric trains, has been extended half a mile to serve a new housing estate, where a station named Alamein has been erected. The extension is single-track only at present. The new Cremorne bridge over the River Yarra near South Yarra has been opened; it carries six tracks, including two new tracks which are being extended to Richmond, alongside the existing metals, and eventually to Flinders Street. This duplication will facilitate the handling of heavy traffic on the Caulfield line.

Deterioration in Coal Position

Towards the end of June, shortage of locomotive coal became acute, and the situation was worsened by bad weather, which delayed work at the New South Wales open-cut mines and hindered shipments. Drastic curtailments in services became essential, and, although the situation has improved somewhat, it has not been possible to restore many of the cuts.

Brown Coal Traffic

Aerial surveys have been made and ground surveys are taking place in connection with the scheme for regrading and duplicating much of the main Gippsland line to cater for the rapidly increasing quantities of brown coal from the Yallourn fields. Greater use of this coal will help to alleviate the present serious coal shortage in the State and reduce the dependence on New South Wales coal. The ultimate electrification of the Yallourn line is envisaged. As a short-term measure to combat the coal shortage, 81 locomotives have been converted to oil-burning.

ARGENTINA

Construction of Diesel Locomotives

By a resolution of the Secretary of Transport it has been decided to appoint a special committee to study ways and means of building diesel-electric locomotives in Argentina. It is considered desirable to plan and produce a standard type of diesel locomotive, capable of being used for both passenger and goods service, especially in view of the present shortage of motive power. The committee will investigate the possibility of erecting, as soon as possible, workshops where complete diesel and diesel-electric locomotives may be built. In the meantime it will ascertain how far existing shops and installations can be utilised, importing, when necessary, those parts of the mechanism and equipment that cannot yet be manufactured locally.

Engineer Pedro C. Saccaggio has been named president of the committee, and other appointments, including two electrical engineers, a civil engineer, an accountant, and an administrative officer, are expected shortly. Eng. Saccaggio was Chief of the Mechanical Department of the Buenos Ayres Great Southern Railway from January, 1923, to February, 1933, and Technical Adviser from March, 1933, to December, 1934. He was responsible for the introduction of diesel-electric traction on the suburban section of that railway.

ITALY

Rolling Stock for Germany

Rolling stock builders in Italy will benefit considerably by the recent allocation of $12,000,000 for the construction of 4,500 railway wagons for Western Germany. About 4,000 of them will be produced in Northern Italy and 500 in the south. The Minister of Transport states that the reason for this rather small allocation to the industry of the south is that the latter is already occupied with orders from the Italian State Railways for 2,500 freight cars, 285 passenger coaches, and 30 electric train sets. These orders and the arrangements reported for the repair of French rolling stock in Italian workshops will occupy fully Italian manufacturers well into 1949.

FRANCE

Token Strikes

General two-hr. token strikes, involving the railways and other transport services, took place throughout France on September 24, in support of claims for wage increases to meet the high costs of living. The general strike movement was initiated by two labour federations with the later adhesion of the General Confederation of Labour, after a series of sporadic token strikes in the provinces.

In Paris the trade unions of the Metropolitan Railway workers and associated bus lines called a 24-hr. strike and thus paralysed the entire passenger transport system of the city and suburbs. Parisians, who had experienced similar transport difficulties in the labour disputes last October and November, bore the strike with good humour, though many were compelled to walk miles to and from work. In

many cases trucks, vans, and motor coaches conveyed employees to and fro.

No trains were allowed to leave stations between 4 and 6 p.m. Drivers were under orders to stop at the nearest station or the nearest point protected by signals; their stoppage was for one hour from 4 to 5 p.m. Suburban passengers had to wait in line for trains until 6 p.m. There were no departures of Air France planes from 4 to 6 p.m. Many taxicabs continued to run, especially those privately owned.

In a last-minute effort to meet the workers' demands, the government decided on measures equivalent to an increase of 15 per cent. in wages. The tax on wages was abolished. In compensation, employers will pay a contribution of 5 per cent. on wages. A rise of 2 per cent. in family allowances and an increase of 7 fr. an hour in wages, equivalent to a rise of 8 per cent., were granted.

Rates to be Raised

Rises in railway rates will be applied shortly. The S.N.C.F. is expected to raise freight charges by 20 per cent., passenger fares by 30 per cent., except suburban passenger fares, which will be raised 60 per cent. On the Paris Metropolitan, the flat fare of 5 fr. will be raised to 10 fr. for the second class. The first class will be re-established, at a fare of 15 fr. In compensation for the rise in fares, workers in the Paris area will be granted an indemnity of 500 fr. a month.

CHINA

Railway Construction

Construction of another trunk railway in South-East China linking the coast province of Fukien with Kiangsi is expected to begin shortly. An initial appropriation of Ch. $600,000,000,000 for the project, included in the national budget for the latter half of 1948, has already been confirmed. The line will begin near Amoy and run *via* Foochow, Hsikow, Shaowu, and Yuanshan to a junction with the Chekiang-Kiangsi Railway at Shangjao. The total length, with branches, will be 572 miles. Apart from the Amoy-Foochow section, most of the line will traverse a mountainous region.

The rehabilitation of the entire 722-mile Chekiang-Kiangsi Railway has been completed, and a ceremony marking the occasion was held at Shangjao. Except for a temporary bridge near Nanchang, capital of Kiangsi, which will be replaced by a permanent structure next spring, and a section of line open to maintenance trolleys only, this important railway has been restored to its pre-war condition. It will be open to general traffic shortly.

The Chekiang-Kiangsi line was opened in 1937, but was almost entirely destroyed to counter the Japanese advance. The U.N.R.R.A. China office contributed more than U.S. $50,000,000 worth of railway supplies for the restoration of the line, which will greatly aid the country's economic recovery, as it will enable merchants to ship thousands of tons of agricultural produce to the coast, in exchange for badly-needed industrial goods.

Publications Received

The Electrolytic Capacitor. By Alexander M. Georgiev. Published by Crosby Lockwood & Son Ltd., 39, Thurloe Street, London, S.W.7. 6¼ in. × 9¼ in. 191 pp. Illustrated. Price 15s.—This book describes the construction, manufacture, function and testing of dry and wet electrolytic capacitors, and explains the operating characteristics of the various types of capacitor. Several of the known theories of the dielectric are briefly outlined. More than 70 photographs, drawings and graphs illustrate the constructional details, manufacturing processes, and operation. There is a useful glossary of technical terms, a bibliography, and a review of the important international patents granted in the capacitor field.

Advanced Industrial First-Aid, 1947. By R. A. Trevethick. Published for the United Steel Companies Limited and obtainable from Henry Garnett & Co. Ltd., "Advertiser" Office, Rotherham, Yorks. 6¼ in. × 4 in. 63 pp. Price 3s.—Originally, this booklet was specially written by Dr. Trevethick, Resident Medical Officer at the Steel, Peech & Tozer branch of the United Steel Companies Limited, for the use of first-aid teams throughout those works. The booklet is intended for those who have already acquired the rudiments of first-aid and, therefore, is not a primary book; its main theme is simplicity and speed, as the author points out that elaborate first-aid destroys its own objective.

Le Réseau National des Chemins de Fer Français (The French National Railways System). By Henri Lartilleux. Paris 17e: Editions P.P.C., 39, Bd. Berthier. 6¼ in. × 10 in. 104 pp. Illustrated. Paper covers. Price 275 fr.—In a small compass the author, a French railway officer, has succeeded admirably in presenting a complete picture of the origin and development of the French railway network, and of the formation, organisation, and future projects of the French National Railways. He deals at some length with the war effort of the S.N.C.F. and the magnificent programme of reconstruction and improvement, which is being pursued vigorously. The great electrification project, involving the conversion of the Paris—Marseilles main line and the former P.L.M. and Nord suburban lines round Paris, and plans for the greater use of railcars on branch and cross-country services are described. In the past, criticisms were made of the over-centralisation of the French railways; a tendency which now is being reversed, as proved by the creation of the Mediterranean Region, formed out of parts of the old P.L.M. and Midi, and corresponding in some degree to our own Scottish Region. There are some useful maps and diagrams. The work will appeal not only to French railwaymen but to the many students of the French railways in this country, by whom it will be welcomed as a useful reference book.

Freight Rate Application. Definitions, Interpretations, Constructions, Explained and Clarified. By Glenn L. Shinn. New York, U.S.A.: Simmons-Boardman Publishing Corporation, 30, Church Street. 9¼ in. × 6 in. 149 pp. Price $3.50.—The origin of this work was a reference book compiled by the author, Attorney-Examiner to the Interstate Commerce Commission, for his own use before he conceived the idea of expanding and presenting it as a guide to those whose work or study is the interpretation of freight rates. Mr. Shinn is an expert on his subject, having formerly had practical experience as a rate clerk and station agent, and his book, although in no way official, is authoritative and informative. For a work of its size the index is particularly comprehensive and the convenient method of grouping footnotes together at the end of the text has been followed.

L.M.S. Route Books: Nos. 1 to 5. Published by British Railways, London Midland Region. Available at principal stations and offices of the London Midland Region. 8½ in. × 6 in. Paper covers. Price 2s. 6d. each.—This series of guide books, compiled by the L.M.S.R. before nationalisation, has been produced for the benefit of travellers over the London Midland Region main railway routes out of London. No. 1 covers "The Track of the Irish Mail," London Euston to Holyhead; No. 2 the route "Along the Viking Border," London Euston to Liverpool; No. 3 "The Track of the Royal Scot" (Part I), London Euston to Carlisle; No. 4 "The Track of the Royal Scot" (Part II), Carlisle to Glasgow Central; and No. 5 "The Track of the Peak Express," London St. Pancras to Manchester Central. Each book contains a mile-by-mile route diagram showing the principal features and points of interest on both sides of the line, indicated by easily-recognised symbols enabling the reader to pin-point his position at a glance. An illustrated descriptive section, for more leisurely perusal, gives particulars of all the interesting places and features in detail. As most of the routes covered in the series overlap, much of the information is necessarily duplicated in the various books. The value of these guides to the traveller who likes to look on a long journey by rail as more than the mere act of getting from one part of the country to another, cannot be over-emphasised.

Anodic Oxidation of Aluminium.—The Aluminium Development Association have published their Information Bulletin No. 14 (price 1s.) on the anodic oxidation of aluminium and its alloys. This is an electrolytic process for thickening the oxide film present on all aluminium surfaces to provide either a key for painting, an insulant coating for an electrical conductor, for decorative purposes, or to increase the naturally high resistance of an aluminium surface to corrosion. A section of the bulletin describes the three main processes of anodising and the plant required.

Industrial Equipment Powered with Ford Engine Units.—Although issued by the Ford Motor Co. Ltd., most of the contents of this binder consist of announcements by other manufacturers, thus illustrating, without the necessity of making extravagant claims, the wide use made of Ford engines in industry. Under the heading of "Locomotives and Railcars," announcements by three manufacturers are included. F. C. Hibberd & Co. Ltd. describes a 10-h.p. petrol locomotive, mainly for use by contractors; E. E. Baguley Limited illustrates inspection railcars which are designed to suit all gauges; and D. Wickham & Co. Ltd. shows another type of railcar which can be made for inspection or luxury tourist traffic. Other sections of the binder, which, by its classification system, constitutes an excellent work of reference, deal with generating sets, and works trucks suitable for moving luggage and freight in stations.

Single-Phase 50-Cycle Locomotive for France

Commutation difficulties at the industrial frequency overcome with small increase in motor weight

THE placing of an order by the French National Railways with the Ateliers de Construction Oerlikon and the Swiss Locomotive & Machine Works, of Winterthur, for a prototype 50-cycle single-phase Co-Co locomotive was recorded in our issue of May 28. Locomotives operating on this type of supply have the advantage that the industrial power supply can be used directly, and therefore gain over direct current machines in that substations with rotary converter or rectifying equipment are not required. The high line voltage of 20,000 allows considerably longer sections to be fed than is possible with 1,500 V. or 3,000 V. d.c.

Compared with single-phase a.c. at 16⅔ cycles, use of industrial frequency current means that no special supply and distribution network for low-frequency power is required. In both cases, great savings in the construction and operating costs of electrification result.

The use of 50-cycle single-phase current has not been able to satisfy the requirements of main-line traction up to the present due to the lack of suitable traction motors. When Dr. Behn-Eschenburg of the Oerlikon company developed the single-phase traction system in 1902 and designed the first practicable single-phase commutator motor, the frequency had to be fixed at one-third of the normal power supply frequency, i.e., 16⅔ cycles, to obtain reasonably good commutation within the limits of acceptable motor weight. Progress made since then in single-phase traction motor construction has enabled Oerlikon to develop a suitable single-phase commutator motor for 50-cycles at the request and with the collaboration of the French National Railways. In this connection, it is noteworthy that the weight of this motor is only slightly higher than that of corresponding modern d.c. motors for 1,500 volts. The new traction motors will be fitted in the trial locomotive ordered by the French National Railways in Switzerland, for tests in comparison with other designs in France.

The new Co-Co locomotive is intended for working goods trains up to 1,350 tons and passenger trains up to 600 tons, with a maximum speed of 62 m.p.h. As many sections of the French railway system are electrified at 1,500 V. d.c., it will have additional equipment to enable it to operate —with reduced power—on that type of supply in stations where single-phase a.c. and d.c. systems adjoin. Some details are given below:—

Power at traction motor shaft	... { kW. 2,590 / H.P. 3,500 (approx.) }	Continuous: 2,780 / One-hour: 3,800
Tractive effort at wheel tread (lb.)	...	31,276	36,376	59,525
Corresponding speed (m.p.h.)	...	40·5	37·25	62
Number of traction motors	...	6
Transformer	...	2,450 kVA, continuous for supplying the traction motors.
Drive	...	S.L.M.
Weight in working order	...	Approx. 114 tons.
Average axle load	...	Approx. 19 tons.

The mechanical portions of the locomotive (Fig. 1) are being designed and built by the Swiss Locomotive & Machine Works, Winterthur. The two three-axle bogies carrying the locomotive body are of entirely novel design, and for the first time achieve a completely symmetrical arrangement in a bogie with three motors. Fig. 2 shows the new bogie, the principle of which is similar to the two-axle S.L.M. bogie described on page 602 of our May 21 issue. The locomotive body is supported by lateral bearings 10, on two longitudinal laminated springs 11. The laminated springs are suspended from two transverse beams 8, which are fixed to the bogie frame 2, by means of oblique swing links 12.

Longitudinally, the body is fixed to the bogie frame by means of the longitudinal member 14, which carries the pivot 4, fastened to the bogie frame cross-stretchers 3. The equaliser 5, which is carried by pivot 4, is connected to the body underframe cross-stretchers 6, through the links 7. Thanks to the equaliser, 5, the tractive effort is equally distributed to the body cross-stretchers 6, without hindering the free lateral play *S* between bogie frame and body underframe. Furthermore, as can be seen in Fig. 1, the arrangement permits a low centre pin position.

The body suspension described not only gives excellent riding qualities, but also allows very easy and rapid lifting of the locomotive body off the bogie. In fact, for this purpose it is sufficient to loosen the few bolts fixing the cross-stretchers 6, to the body brackets 9 (Fig. 2). This new bogie also embodies self-lubricating cylindrical axlebox guides, fitted with Silentbloc to absorb lateral shocks acting on the wheels and axle.

The S.L.M. flexible drive with floating ring, to be used in this locomotive, is shown in Fig. 3. It consists essentially of a number of springs arranged tangentially in the interior of the large gearwheel. The springs are inserted between brackets on the driving axle and the gearwheel. This gearwheel, which transmits the drive, rotates in spherical roller bearings supported by a substantial longitudinal member 1 of the bogie frame, which acts at the same time as the gearwheel casing and a carrier for the electric motor on the gearwheel side. The drive is similar in some respects to the universal drive of the Swiss Locomotive & Machine Works, which has

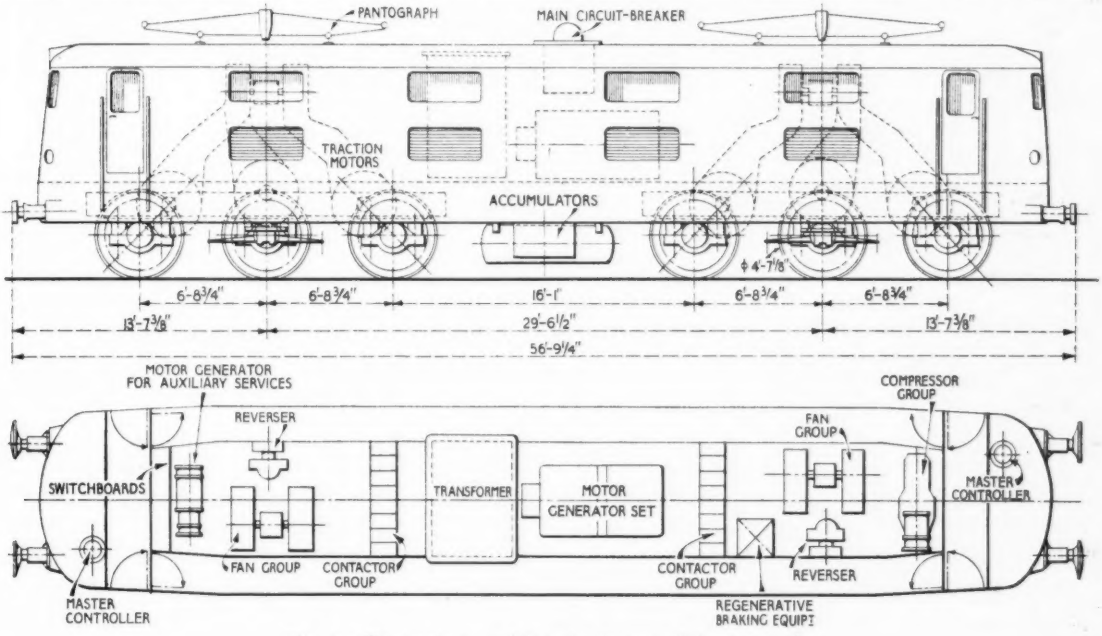


Fig. 1—Dimensions and interior layout of the locomotive

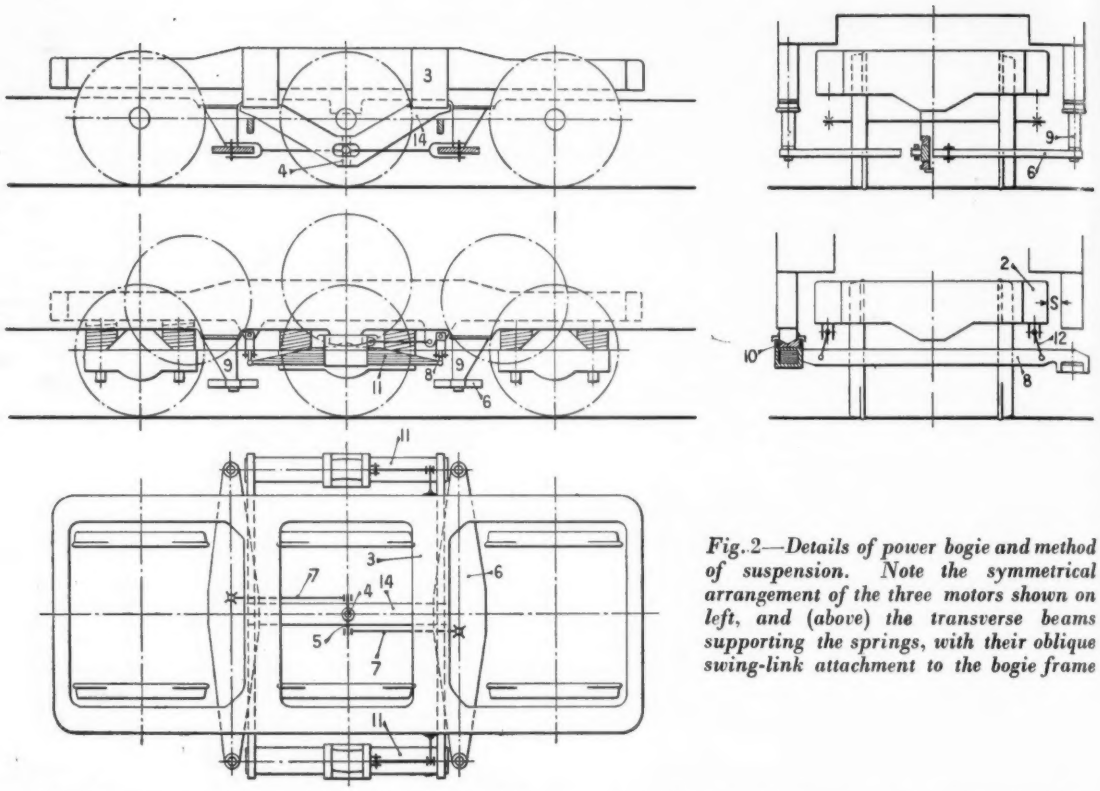


Fig. 2—Details of power bogie and method of suspension. Note the symmetrical arrangement of the three motors shown on left, and (above) the transverse beams supporting the springs, with their oblique swing-link attachment to the bogie frame

proved its reliability over a long period. The gearwheel is built up of three parts, namely, the gearwheel rim, with the teeth, 2, and the two discs 3, the latter running in the roller bearings 4, which are lodged in the gear case 1. The torque of the electric motor is transmitted through a pinion to the large gearwheel 2, and thence by means of the brackets 6 (in one piece with the gearwheel), and springs 8, to the floating rings 5, which have noses 5*a* to take up the torque. Then the power is transmitted further through the springs 9 (of the same design as springs 8), and brackets 7, made in one piece with the spider 10, the latter being pressed on the driving axle.

When the centre of the gearwheel is displaced vertically in relation to the centre of the driving axle, the difference in height is taken up by compression of the various elastic elements of the drive. The floating rings in this case are subject to only half the bogie frame deflection. Fig. 3 shows a drive with six elastic elements. In the new Co-Co electric locomotive for France there will be eight elements.

Lubrication of the different parts of the drive is effected by a system of pockets and pipes, which collect the oil and distribute it centrifugally to the points where it is required. This type of flexible drive has the advantages of simple design and manufacture, location of the springs independently of the gearwheel, and avoidance of eccentric loads on springs.

Electrically, the equipment of the Co-Co locomotive consists primarily of a tapped transformer, a low-tension control

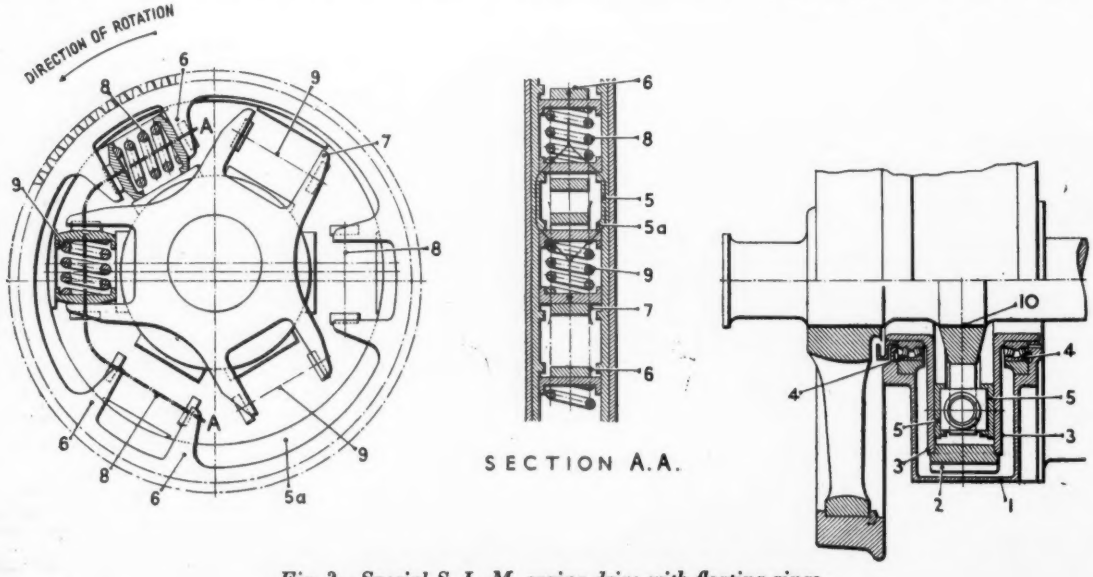


Fig. 3—Special S. L. M. spring drive with floating rings

circuit for the electro-pneumatic contactors, and six traction motors mounted on the bogie frames.

When operating on 1,500 volts d.c. the supply will be converted to single-phase a.c. by a motor-generator group and supplied to the transformer. Thereafter, the current will be fed to the traction and auxiliary motors as in direct single-phase operation. Precautions have been taken to make incorrect switching impossible when changing over from single-phase to d.c. supply and *vice versa*. The locomotive is equipped with single-phase regenerative braking, the circuit of which is arranged to permit operation at a high power factor and to provide retardation down to standstill. All the auxiliary motors are of the ordinary induction type.

It is expected that the locomotive will be ready for delivery in 1950.

Progress of Belgian Electrification

Despite delays due to financial restrictions, the first stage is due for completion in August next year

ACCORDING to recent official statements, progress with the comprehensive electrification scheme covering approximately 930 route-miles of railways in Belgium was retarded in 1947, owing to curtailment of financial allocations. Particulars of the scheme have been given in our issues of March 7 and August 15, 1947, and March 26 this year. Under proposals submitted by the Electrification Commission (Commission Nationale d'Electrification des Chemins de fer), and accepted in principle by the Government, expenditure in connection with the scheme is to be borne in part by the Belgian National Railways, in part by the State, and in part jointly, as below:—

1.—Expenditure on elimination of level crossings to be borne by the State;

2.—Expenditure in connection with war damage on lines to be electrified to be borne jointly by the Belgian National Railways and the State;

3.—Expenditure for which the renewals fund would be liable to be borne by the Belgian National Railways.

4.—The remaining expenditure, representing new investment relating to electrification, to be borne jointly by the Belgian National Railways and the State.

The whole electrification programme has been divided into different stages, each covering lines where electric traction can be brought into use without affecting adversely other sections. The first stage, comprising 78¼ route-miles, is already in hand. It comprises the Brussels Midi—Linkebeek—Baulers—Charleroi Sud main line (34·8 route-miles); the steam-worked Brussels Nord—Antwerp Nord main line (27·3 route-miles); and the connecting loop linking Linkebeek Junction (5 miles from Brussels Midi) with Schaerbeek (1·8 miles from Brussels Nord) on the above Antwerp line.

Work carried out in 1947 on this group of lines comprised laying the concrete foundations for the standards of the overhead system for about 56 route-miles. This was done by means of a special concreting train. At Brussels Midi, at Baulers (18 miles further south), and at Charleroi the buildings for the substations have been completed, but their electrical equipment, as well as the whole of the overhead system, are still in the hands of the manufacturers.

The quadrupling of the 9·3-mile section between Charleroi and Luttre is being proceeded with, together with comprehensive improvements at Luttre, Monceau, Marchienne-au-Pont, and Charleroi. Owing to the financial limitations mentioned above, and the slowing down of the work due to them, completion of the conversion has been delayed considerably. If no further financial restrictions are imposed, electric traction on the Brussels Midi—Charleroi and Linkebeek—Antwerp Nord lines is likely to be introduced by August, 1949. By that date, it is expected that the raising of four tracks at Brussels Midi will have been completed, enabling Charleroi trains to use the high-level terminus.

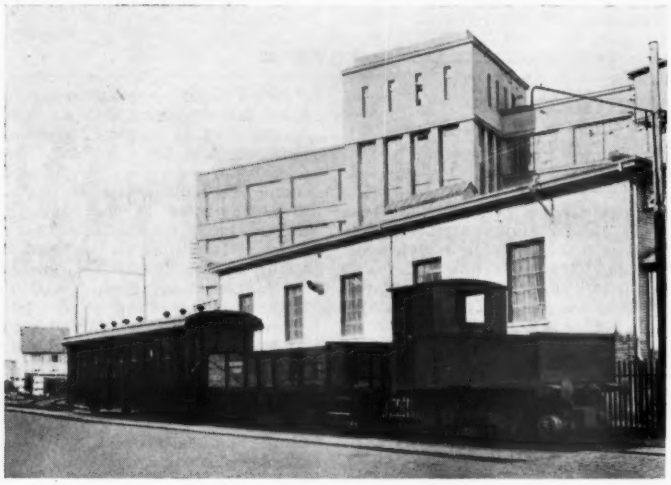
The second group of lines to be electrified, totalling 251½ route-miles, comprises the following lines: Brussels Nord—Louvain; Louvain—Malines; Louvain—Liége; Brussels Nord—Ostend; Brussels Nord—Ottignies; Ottignies—Gembloux—Namur; Ottignies—Louvain; Gembloux—Ronet; Bruges—Bruges Sint Pieters—Knocke; and Bruges Sint Pieters—Blankenberge. The putting in hand of these conversions, however, depends on decisions reached concerning the financial problem. This is being studied by a special Ministerial Committee. The building of the 26 electric Bo-Bo locomotives (see our August 15, 1947, issue), as well as of 25 twin-unit railcars, all intended for the first group of electrified lines, is being continued.

British-Built Electric Locomotives for South Africa

One of the twenty-eight Class "3E" 2,700-h.p., 3,000-V. electric locomotives now being supplied by the Metropolitan-Vickers Electrical Co. Ltd. to the South African Railways

Electric Traction without Current Collection

Swiss system of flywheel storage obviates third rail and overhead line for light traction duties



Gyrotractor in shunting service

AFTER many years of experiment, the Oerlikon Company of Switzerland has taken a decisive step towards the achievement of a practical electric vehicle deriving power from three-phase mains, but not requiring a third rail or overhead conductor. The prototype is not regarded as a competitor with existing heavy electric units, but its purpose is to make electric traction feasible in conditions of very low traffic density, or in circumstances where normal collection systems are undesirable.

As a result of intensive study, it was seen that the kinetic energy stored in a flywheel, accelerated to a speed of approximately 3,000 r.p.m. by an electric motor running on the normal three-phase distribution network, offered favourable possibilities for electric traction. If a mass of 1,000 kg., in the form of a high-speed flywheel moving at 100 m. per sec., is installed in a rail vehicle of 20 *tonnes* total weight, which has a rolling resistance of approximately 5 kg. per *tonne*, the energy is theoretically sufficient to drive the vehicle for approximately 20 km. Longer distances can be covered as the speed and weight of the flywheel are increased.

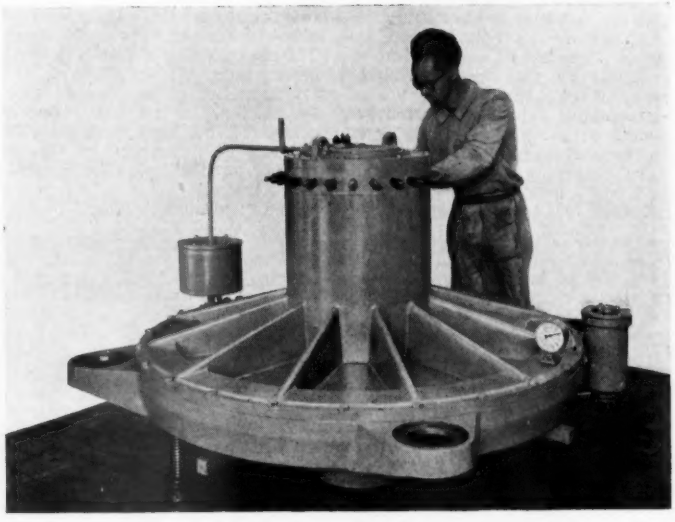
In the Oerlikon Electrogyro, a flywheel of high-grade chrome nickel steel is made in one piece with a pole-changing three-phase squirrel cage motor. The flywheel motor unit runs on heavy oversize ball-bearings with oil lubrication in a hermetically sealed chamber evacuated and filled with low-pressure hydrogen. Windage and friction losses are so low that the running time from full speed to a stop is over 10 hr.

The safety factor was carefully considered. Stressing of the flywheel material is not more than one-quarter of breaking stress. Triple safety bearings and a special automatic high-speed safety brake guard against the possibility of bearing failure. On connecting the motor to a three-phase supply, the flywheel is accelerated within a few minutes to 3,000 r.p.m. When the vehicle is running the motor operates as a generator, having a special excitation system incorporating regulation by means of switched banks of capacitors. The frequency of the current supplied to the separate traction motor can be varied by changing the generator poles, and so a wide range of speeds is available.

It is estimated that a railcar with two gyro-generators of the type described could travel approximately 12½ miles on the level after running up the flywheels, assuming a loaded weight of 40 *tonnes*. Since the average distance between stations on local lines is normally some two or three miles, a complete train could be operated instead of a single coach, energy being restored from the mains at every stopping station. A certain amount of energy can be recovered also by regenerative braking when stopping and descending gradients.

It is also possible to increase the range by using the mains current direct in the traction motor during the starting period, the coach being fitted with roof contact rails which continue to be energised from the fixed supply points during the first few yards of movement.

The Electrogyro principle has possibilities also for shunting and works locomotives, or for use in mines where inflammable gases are encountered.



Electrogyro flywheel

MOSCOW UNDERGROUND AND FIVE-YEAR PLAN.—The traffic target of the Moscow Underground for the current year within the framework of the 1946-1950 Five-Year Plan, as disclosed on the occasion of the recent Soviet Railway Day (August 1), aims to exceed by 10 million passengers the transport capacity envisaged, and reduce the cost of transport by 4 per cent., as compared with the level attained in 1947. Further plans aim at saving power, despite the envisaged intensification of the traffic, through rationalising control and operative efficiency. The intended economy should total 2,000,000 kWh. Finally, an increase of 5,500,000 roubles in the working surplus as envisaged for the current year is planned. The General Management for the Building of Tunnels and of the Moscow Underground announced a plan to complete the stations of the first section of the fourth underground line now building at Moscow by November 7 next, and complete the whole line by January 1, 1949. Further intentions announced a reduction of 5 per cent. in the building cost of the underground system, and an increase of 15 per cent. in the efficiency of the workers employed on the underground lines now building.

IMPERIAL CHEMICAL INDUSTRIES.—The directors of Imperial Chemical Industries Limited have declared an interim dividend, payable on December 1, of 3 per cent. in respect of 1948 on the ordinary stock issued on July 20, 1948 (unchanged).

The Bombay Port Trust Railway

Connection between main lines and the port district of Bombay, handling heavy goods traffic and passenger boat specials

By H. C. Towers,

M.I.E.E., M.I.R.S.E., M.Inst.T., Fellow P.W. Inst.

"H" class locomotive, Bombay Port Trust Railway

ALTHOUGH many people, including railway officers, know a great deal about the Port of Bombay, few know anything of its railway, from which 50 per cent. of the goods traffic booked out of Bombay emanates. The railway serves all the docks of the Port of Bombay, as well as the various depots allotted to certain trades. It is intended primarily for goods traffic, but also conveys troop and passenger trains run in connection with steamers. It consists of a 5-ft. 6-in. gauge track for its whole length, as well as reception and sorting yards, eleven stations, and a large number of private sidings, as well as numerous sidings in the docks. The railway was authorised in 1913.

The terminal station for passenger traffic is at Ballard Pier, where the P. & O. and other passenger steamers ordinarily berth. The first two months of 1948 showed an average of 28 special trains per month run into this station. The route-mileage from Ballard Pier to Raoli Junction is 7 miles, while the total track-mileage is 135·58 miles.

The tracks are laid throughout with 75-lb. flat bottom rail with the exception of a short distance with "90R" and 90-lb. track. Timber sleepers are used, principally sal, except for 17½ miles laid with pea pod steel sleepers. The line is fenced throughout.

Connection with the Great Indian Peninsula Railway and the Bombay, Baroda & Central India Railway is effected at Raoli Junction. At Wadala Junction, a short distance from Raoli, the down arrival yard has 8 tracks and the down departure 14. The down departure yard and the up departure yard are both hump gravity sorting yards in which through goods trains are marshalled in the down direction for the two adjoining railways; and for the various depots on the Bombay Port Trust Railway in the up direction.

The down departure yard has four tracks provided with overhead collecting wires to enable electric locomotives of foreign railways to use the yard as well as steam locomotives. The up arrival and the up departure yard consist of 7 and 20 tracks respectively. The former has two tracks provided with overhead electrical equipment for the reception of trains hauled by electric locomotives.

The main line of the railway is signalled by Tyers three-position three-wire instruments, and there are nine block sections. There is a tenth block section signalled by Neale's ball token instruments. Eight signal boxes and 10 ground frames provide the interlocking for the main line. The largest signal cabin has 70 levers and there are 91 interlocked points, 142 semaphore signals, and 10 dwarf shunts. Non-interlocked points number 709.

The railway possesses 23 locomotives, 21 "A" class and 2 "H" class, and 678 goods wagons. Details of the two classes are:—"A" class: Weight, 64 tons; boiler pressure, 180 lb.; cylinders, 15 in. dia. × 26 in. stroke; wheel classification, 2-6-0. "H" class: Weight, 105 tons; boiler pressure, 180 lb.; cylinders, 23½ in. dia. × 26 in. stroke. Wheel classification, 2-10-2.

The wagons consist of open, covered,

Up "Frontier Mail" entering Ballard Pier station

B.B.C.I.R. down "Frontier Mail" in Bombay Docks

and timber wagons, and the railway maintains its own rolling stock. The principal goods carried from ships to depots and *vice versa* are grains and seeds, motor components, manganese ore, lubricating oil, chemicals, and sizing material.

Goods despatched from the Bombay Port Trust Railway up country consist of a miscellaneous collection of commodities, varying from cotton, for the mill areas, to powdered milk, petrol, kerosene, and fuel oil. Goods received for distribution in Bombay are cotton, grains and seeds, manganese, vegetable oil, coal and charcoal, asbestos cement products, scrap iron and steel, and so on. The total tonnage handled for the year 1946-1947 was 2,622,497 tons.

During the war the Port of Bombay handled practically all the war shipping to and from India, and Alexandria Dock Station ranked during that period as the largest goods booking station in India. After the war, during the food shortage in India, the railway handled the bulk of the food grains traffic, both in Port Trust wagons to the Food Controller's local godowns at grain and cotton depots; and also in foreign wagons to the different provinces *via* Wadala Junction.

The railway has its own administration and staff, with offices close to Ballard Pier Station. Although small, it is very efficiently run and maintained, and is a very important asset to one of the busiest ports in the world. Acknowledgment is given to the Manager of the Bombay Port Trust Railway for permission to publish this article and for the use of photographs.

The London Midland Region Paint Laboratory

Research has advanced paint technology and effected valuable economies

THE genesis of the Derby Paint Laboratory of the London Midland Region, which was briefly referred to in our September 24 issue, was in 1912, when Mr. F. Fancutt, F.R.I.C., A.M.I.Chem.E., Paint Technologist, London Midland Region, then an apprentice in the Wolverton works of the L.N.W.R., began experiments to reduce the many coats of paint, often seventeen, used in painting coaches. Mr. Fancutt and his staff of 24 scientists and paint technicians are engaged wholly in evolving new and better paints, and advising on their uses and cleaning.

The work of the section has contributed to paint technology, and its personnel have co-operated with the iron and steel industry in investigating the prevention and corrosion of structural steel work. It has some interesting methods of paint testing. Small steel panels coated with various paints and ingredients are subjected to rigorous tests. Some are placed in the St. Pancras tunnels, reputed to be one of the most polluted places in the country, others are exposed for two or three years in the open at Derby, but, as it is often impossible to wait so long, an accelerated weathering machine and other apparatus are used to reproduce the varied atmospheric conditions encountered in railway locations, from tunnels to seaside stations.

The weatherometer, designed in the laboratory and the only one of its kind in the country, is a 4 in. dia. drum rotating three times an hour. Panels inside the tank are exposed alternatively to destructive ultra-violet light and a water spray, corresponding to sunshine and rain. One month's exposure in the machine is equivalent to 12 months of normal weathering. Effects of various types of industrial atmosphere, such as that of Sheffield and the Black Country, are given by exposure to steam in the presence of sulphurous gases.

Another machine enables a slice of paint a fraction of an inch thick to be placed under a microscope and the paint history of a structure to be deduced. A bridge at Burton was found thus to have had 42 coats of paint since it was built in 1856, and it was discovered that the total weight of paint on St. Pancras Station roof was approximately 53 tons!

Development of Cleaning Materials

The development of all types of cleaning materials for rolling stock, stations, offices, and so on, is under constant review, and for this purpose the laboratory makes its own dirt and grease. The Chief Mechanical Engineer's Department is one of the principal customers of the laboratory. Formerly, the painting of one coach might occupy 21 days, but after numerous experiments, a process was evolved taking only two days yet doubling the lifetime of the paintwork.

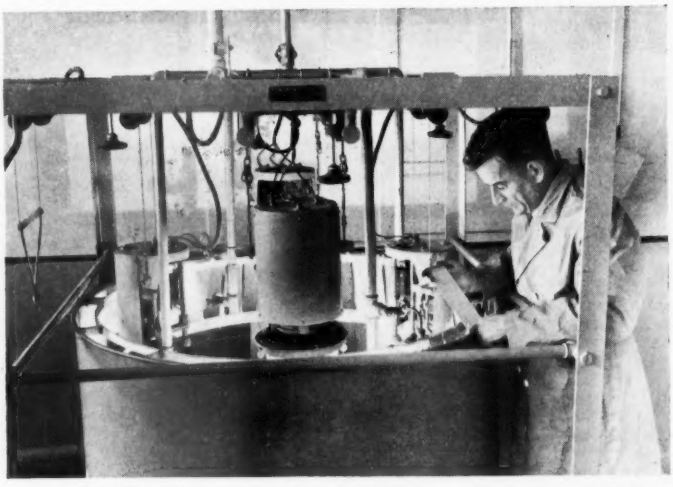
When steel-panelled coaches were introduced, it was found that rust formed on the sheets by their being handled with perspiring hands was a serious problem; a special wash had to be devised to prevent the metal from rusting in this way.

For the interior decoration of carriages the modern cellulose synthetic resin materials developed in the laboratory have a life of 8-10 years, compared with the former french polished surface life of 3-5 years. The new finishes resist condensation, are easier to clean, and non-inflammable. Some specifications prepared by London Midland Region experts are recognised now throughout the cellulose-lacquer manufacturing industry.

Surface preparation and the effect of atmospheric conditions on painting have been the subject of much research. Removal of all rust and dirt has been found the most important single factor in successful painting. Special paints have been formulated, and spray painting machines have been designed. One coat of paint on a station now provides a similar effect and durability to that formerly given by two or three coats. Consequently, more stations have been painted despite the labour shortage.

Quick-drying paints and paints devoid of odour, to avoid food contamination, have been produced for railway hotels, canteens and kitchens. The basis of this paint is now recognised throughout the paint industry. There has been co-operation with the Road Motor Department in the construction and layout of paint shops, specially designed for paint spraying and a school was set up by the paint section to teach vehicle painters the correct use of the spray gun. It was found that 3-4 days were being spent on cleaning a vehicle before painting. The Road Motor Engineer's representative jocularly suggested that what was wanted was a cleaner which could be sprayed on and after, say, 5 minutes, washed off, bringing with it all the dirt. The challenge was accepted by the paint experts, and the chassis cleaner now in use reduced the cleaning time to not more than half a day.

Waterproof wagon sheets manufactured by the railway are weighty, costly and short-lived and they have been subjected to research by the paint experts. Much of these experts' work, in conjunction with the Stores Department, is in the control of paint supplies and the resulting standardisation of processes and materials has reduced considerably the number of items used, and allowed lower minimum stock.



Accelerated weathering machine, Derby Paint Laboratory, L.M.R.

We are indebted for the above particulars and illustration to *Carry On*, the magazine of the London Midland Region.

A.S.F. MID-YEAR CALENDAR.—We have received from the American Steel Foundries, Chicago, a copy of the admirable wall catalogue, which for many years that firm has issued, covering the mid-year to mid-year period from July, 1948, to June, 1949. Once again the theme of the illustrations to the catalogue is a reproduction of historic railway pictures in colour.

Scenes on the Sivas to Erzerum Line, Turkey

Rail and road bridges across the Euphrates

Concrete bridge crossing a river among the Atma Bogazi range

Bridge and tunnel in the Atma Bogazi Mountains

The section of the Turkish State Railways from Sivas to Erzerum forms part of the line of communication from Istanbul to the Russian frontier *via* Ankara and Kaisarie. At present the continuation of the Sivas—Erzerum line from Erzerum to Sarikamish (98 miles) is narrow gauge, but a standard-gauge line, largely on a new alignment, is now being laid (see our February 1, 1946, issue).

Atchison, Topeka & Santa Fe Passenger and Freight Diesels at Barstow

An array of diesels outside the diesel maintenance shop at Barstow, California. Locomotive No. 18, a new four-unit 6,000-h.p. Electro-Motive diesel is shown in the foreground. Beside it are: (1) *No. 127 diesel freight locomotive,* (2) *No. 158 passenger locomotive of older design than No. 18,* (3) *a new American Locomotive Company three-unit 6,000-h.p. diesel, and* (4) *a freight locomotive similar to No. 127*

RAILWAY NEWS SECTION

PERSONAL

Dr. John Matthai having taken over the portfolio of Finance in the Government of India, Mr. Gopalaswami Ayyanger has been appointed Minister for Railways & Transport, with cabinet rank. Mr. K. Santhanam, a member of the Constituent Assembly and Standing Finance Committee for Railways, has been appointed as a Minister of State to assist the Minister for Railways & Transport.

Sir James Grigg has been appointed a Director of the Westinghouse Brake & Signal Co. Ltd.

We regret to record the death on October 1, in his 87th year, of Mr. John Herbert Vickery, J.P., who was Chief Docks Manager, Great Western Railway, from 1922 to 1924.

Mr. J. S. McGowan, Director of Colonisation & Agriculture, Canadian National Railways, arrived in London recently. He plans also to visit Scotland and Ireland, and will make a tour of Continental countries, accompanied by Mr. E. H. Gurton, European Commissioner of Colonisation for the C.N.R., before returning to Canada early in November next.

Mr. J. F. Ginna has been appointed Assistant to the Vice-President in charge of Production of the American Car & Foundry Company. Mr. Ginna has been associated with A.C.F. for over thirty years.

Mr. R. O. Squarey, M.C., M.Inst.T., has recently retired from the position of Transport Controller to Imperial Chemical Industries Limited. Educated at Rugby, he joined the London & North Western Railway in 1906 and served in a number of positions until appointed Divisional Controller at Liverpool. From there he went to I.C.I. in 1930. He is a former Member of Council of the Institute of Transport.

Mr. L. G. Burleigh has been appointed Transport Controller to I.C.I. in succession to Mr. Squarey.

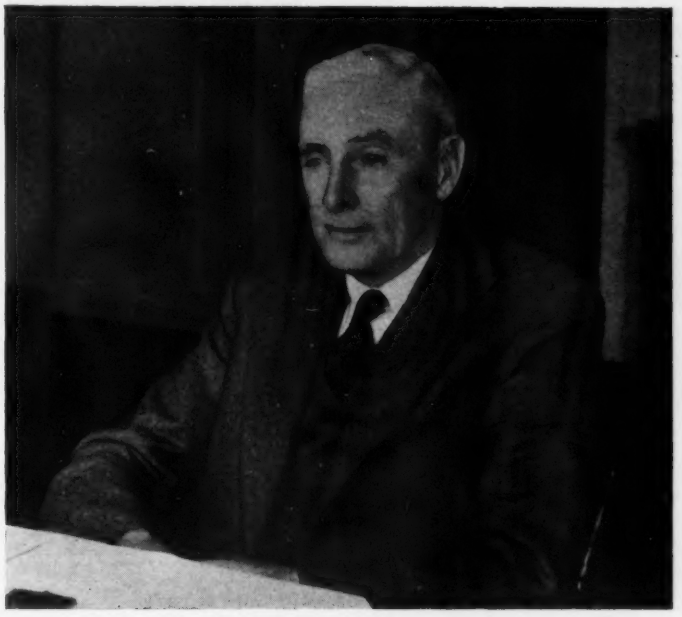
PRESENTATION TO MR. T. W. ROYLE

A silver tankard engraved with the armorial devices of the Lancashire & Yorkshire, London & North Western and London Midland & Scottish Railway Companies and the British Transport Commission was presented recently to Mr. T. W. Royle, on the occasion of his retirement from the position of Deputy Chief Regional Officer, London Midland Region, by Mr. G. L. Darbyshire, Chief Regional Officer.

IRON & STEEL BOARD

The winding-up has been announced by the Ministry of Supply of the Iron & Steel Board, the members of which are:—Sir Archibald Forbes (independent Chairman), Mr. G. H. Latham and Mr. R. Mather (appointed by the British Iron & Steel Federation), Mr. Lincoln Evans and Mr. A. Callighan (trade union members), Sir Wilfrid Ayre and Sir Alan Barlow (independent members). With the exception of the trade union representatives, the members have declined the Minister's invitation to serve for a further year from October 1 this year, the expiry date of their original appointments, except for completion of work on outstanding major problems.

Mr. T. J. Hartigan, C.M.G., who retired on September 30 from the position of Commissioner for Railways, New South Wales, had held that appointment for some fifteen years and had completed over 55 years' service in the Railways Department. Mr. Hartigan was born in 1878, and entered the railway service as an apprentice clerk in the Accounts Department in 1893. After six years' junior service, three years as an assistant examiner, five years as an expenditure clerk, and two years as capital works clerk, he became, in 1911, Head of the Book-Keeping Section. Five years later he was appointed Assistant Chief Accountant, and in 1921 he was made Chief Accountant. In 1928, following an enlargement of the Accounts Branch into the Finance Branch to include Audit and Statistical functions, he was placed in charge with the title of Comptroller of Accounts & Audit. When the Ministry of Transport Act, creating a Department of Transport, was passed in 1932, Mr. Hartigan was made Transport Commissioner, Finance Branch, and was charged with the duties attached to control of railway finances and management of stores. In December of the same year, subsequent to legislation which made the railway organisation a separate department, he was appointed Commissioner for Railways. During his term of office as Chief Accountant, Mr. Hartigan was responsible for much reorganisation of the accounting, auditing, and statistical work of the department. During trips abroad in 1929 and 1935, he studied railway operation in various countries, including England and the United States. Mr. Hartigan's contribution to the welfare of the State of New South Wales was recognised by the award of the C.M.G. in 1936.



Mr. T. J. Hartigan

Commissioner for Railways, New South Wales, 1932–48

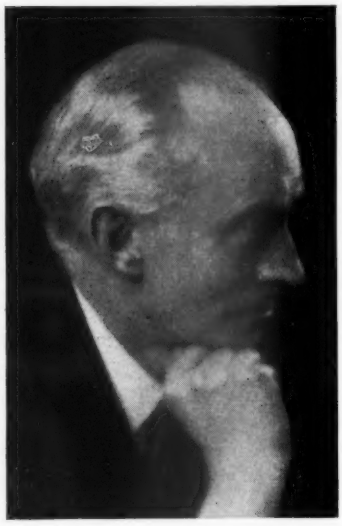
Lord Rothschild has resigned from the board of British Overseas Airways Corporation on his appointment as Chairman of the Agricultural Research Council, and the Minister of Civil Aviation has appointed Marshal of the R.A.F. Lord Douglas of Kirtleside to be a member of the B.O.A.C. board.

Mr. Maurice F. Coop has been appointed Secretary to the Dunlop Rubber Co. Ltd., in succession to Sir Charles Tennyson, who has retired. Mr. Coop, who is 41, joined the company in 1936, and has been head of its Legal Department.

Colonel W. F. Lumsden has resigned from the board of the La Guaira & Caracas Railway Co. Ltd.

We regret to record the death on October 3, at Hove, of Mr. Sidney Emile Garcke, C.B.E., at the age of 63. He was born in London in January, 1885. On completing his education at London University, he joined the staff of the British Electric Traction Co. Ltd., which had been formed by his father, Mr. Emile Garcke. From the first, he took a keen interest in the introduction of the motor bus, and helped with experiments in Birmingham. The severe gradients killed that enterprise, and Mr. Sidney Garcke urged that the buses be tried on the comparatively flat country around Deal, Kent. He began the service there in 1908, with six discarded Birmingham buses, and laid the foundation of the East Kent Road Car Co. Ltd., of which he was Chairman for 29 years. He was also an officer of the British Automobile Traction Co. Ltd., of which he became a Director in 1910, and Managing Director in 1912. During the next decade, through the instrumentality of that company, Mr. Garcke launched many provincial bus enterprises, and purchased shareholdings in a number of existing companies, beginning with the Aldershot & District Traction Co. Ltd. in July, 1912. In December, 1912, on behalf of the

B.E.T. Group, he concluded a non-competitive agreement with the London General Omnibus Co. Ltd. During the 1914-18 war he was Officer Commanding, Berkshire R.A.S.C., M.T., with the rank of Major. He resigned his position as Managing Director of the B.A.T. at the end of 1918 to devote more personal attention to the associated companies, but retained his seat on the board and became Chairman in 1923. He became a Director of the parent B.E.T. in 1928, and held that office until his death. He was also at one time Chairman of the Executive of the B.E.T. Federation Limited, and at different periods was Chairman or a Director of many companies in the B.E.T. Group. His work in connection with negotiations with the railway companies is mentioned in an editorial note in this issue. In July, 1943, he joined the boards of the Eastwoods Group of brick manufacturers, and also of Dennis Bros. Ltd., retiring thereafter gradually from his executive work in the bus industry. He resigned his last group of bus Chairmanships (Aldershot & District, East Kent, Maidstone & District, and Southdown) in July, 1946, but retained his seat on those boards. Mr. Garcke was one of the founders of the Provincial Omnibus Owners Association in 1913, and served through successive amalgamations up to the formation of the Public Transport Association in 1943; he accepted honorary membership of the last-named in 1947. He was a Member of the first Council of the Institute of Transport, was awarded a Road Transport Gold Medal by that body, and served as President in 1934-35. He was President of the Omnibus Society in 1946-47. Mr. Garcke was a member of the Transport Advisory Council and served on several Government committees before and during the recent war. He was created C.B.E. in the New Year Honours, 1941.



The late Mr. Sidney Garcke

A pioneer of the provincial bus industry

Scottish Region Appointments

The following appointments have been made in the Scottish Region, British Railways:—

Mr. J. Gillespie, Locomotive Accountant, to be Assistant Accountant.

Mr. R. J. Buchanan, Booking & Parcels Agent, Edinburgh (Princes Street), to be Stationmaster, Edinburgh (Princes Street).

Mr. W. M. C. Scott, Assistant District Controller, Motherwell, to be Assistant (temporary) to the District Superintendent, Glasgow (Queen Street).

We regret to record the death, in the United States, on October 3, of Mr. George A. Blackmore, Chairman of the Westinghouse Air Brake Company, of Pittsburgh, and of the Union Switch & Signal Company, of Swissvale, Pennsylvania, and a Director of the Westinghouse Brake & Signal Co. Ltd., London.

Indian Railway Staff Changes

Mr. N. A. R. Sequeira, Officiating Deputy Chief Accounts Officer, B.B.C.I.R., has been appointed to officiate as Joint Director, Finance, Railway Board.

On transfer from the Great Indian Peninsula Railway, Mr. T. A. Joseph, Officiating Deputy Traffic Manager, has joined the South Indian Railway as Officiating Chief Traffic Manager.

Mr. B. B. Mathur, Administrative Officer, Traffic, Eastern Punjab Railway, has been appointed Officiating Director, Operating, Railway Board. Mr. Harbans Singh has been appointed Administrative Officer, Traffic, Eastern Punjab Railway.

Sir Cyril Hurcomb with Railway, Road and Docks Officers

A group including Sir Cyril Hurcomb, Chairman, British Transport Commission, at Manchester during his recent tour in Cheshire and Lancashire. This is the first illustration of officers of the Railway, Road and Docks Executives assembled with Sir Cyril Hurcomb

Front row (left to right): Messrs. R. O. Banister, Divisional Operating Manager, Manchester, L.M.R.; G. L. Darbyshire, Chief Regional Officer, L.M.R.; V. M. Barrington-Ward, Member, Railway Executive; Sir Cyril Hurcomb; Messrs. W. E. Macve, N.W. Divisional Manager (Freight), Road Transport Executive; C. M. Marsh, N.W. Divisional Waterways Officer, Docks Executive; J. H. Brebner, Chief Public Relations & Publicity Officer, B.T.C.

Back row (left to right): Messrs. O. Tewson, Solicitor, Manchester, L.M.R.; G. W. Stewart, District Superintendent, Eastern Region; H. Travis, District Estate Agent, L.M.R.; K. C. Marrian, District Engineer, L.M.R.; A. S. Railston, District Goods Manager, Eastern Region; H. P. Aggleton, District Goods Manager, L.M.R.; H. Haughton and G. E. Intin, T.G.W.U.; R. C. Flowerdew, District Passenger Manager, L.M.R.; J. O'Neill, Advertising & Publicity Officer, L.M.R.; W. F. Sharman, District Organiser, A.S.L.E.F.; B. J. Pilkington, Assistant District Operating Manager, Manchester (W.), L.M.R.; W. N. Haytor, District Organiser, N.U.R.; C. G. Derbyshire, Acting Divisional Signal & Telegraph Engineer, L.M.R.; C. N. Christensen, Managing Director, North Western Transport Services Limited; J. C. Francis, General Secretary, United Road Transport Workers Union, Manchester

Sir Cyril Hurcomb's Tour of Cheshire and Lancashire

Station rebuilding schemes announced

During a three-day inspection of railway, dock, road and inland waterway installations in Lancashire and Cheshire last week, Sir Cyril Hurcomb, Chairman of the British Transport Commission, announced important rebuilding schemes in Crewe, Manchester and Liverpool. Details of the scheme at Crewe were given in our last week's issue, p. 389.

Sir Cyril Hurcomb was accompanied throughout by Mr. J. H. Brebner, Chief Public Relations & Publicity Officer, British Transport Commission; Mr. V. M. Barrington-Ward, Member, Railway Executive; Mr. G. L. Darbyshire, Chief Regional Officer, London Midland Region; and Mr. Jos. O'Neill, Advertising & Publicity Officer, London Midland Region. He met local officers and men and was host to the civic authorities, representatives of the Chambers of Trade and Commerce, and trade unon officials.

Railway officers who escorted Sir Cyril Hurcomb through their particular departments were, Mr. I. C. Forsyth, Works Manager, Crewe; Mr. W. B. Shelton, Divisional Operating Manager, Crewe; Mr. S. O. Screen, District Operating Manager, Crewe; Mr. R. O. Banister, Divisional Operating Manager, Manchester; Mr. H. P. Aggleton, District Goods Manager, Manchester; Mr. A. Maxwell, Goods Agent, London Road; Mr. A. Icke, Goods Agent, Ancoats; Mr. P. J. Fisher, District Operating Manager, Liverpool.

During his visit to Manchester, Sir Cyril Hurcomb referred to proposals submitted by the Manchester & District Planning Committee in 1946 for the provision of one main station, to be called "Trinity," in place of the present Victoria & Exchange, Salford, and Central Stations. These proposals had not been considered as practicable by the L.M.S.R., as they presented insuperable operating difficulties, even apart from their high cost. Manchester Victoria and Exchange Stations suffered considerable war damage.

Plans are now ready for a centralised parcels office and depot at Victoria Station to deal with all Manchester rail parcels traffic at one point, instead of at the separate stations as at present. This would improve railway facilities and also materially reduce the occupation of the streets by railway parcels vehicles. The station roof is to be fully restored and modern refreshment and staff rooms provided, with an improved station concourse.

At Manchester Exchange Station, plans costing some £200,000 provide for a new station frontage facing the City approach. A spacious entrance hall, with modern booking office, will allow an unrestricted flow of passengers to and from the platforms and much improve waiting and refreshment room facilities. These plans will be put into operation as soon as building restrictions permit.

During his visit to Liverpool, Sir Cyril Hurcomb said that meetings had taken place some time ago between the L.M.S.R. and representatives of the Liverpool Corporation to discuss proposals which the Corporation had in mind as affecting railway interests, but the important schemes which the railways had planned would not extend beyond the existing railway boundaries.

In spite of the recent remodelling of the lines, re-signalling, and the lengthening of the platforms at Liverpool Lime Street, the concourse and station buildings are still cramped, and as soon as circumstances allow, British Railways intend to reconstruct this station on modern lines. It is planned to provide new waiting rooms, enquiry facilities, cloakrooms, grill room, refreshment rooms and shops, and probably a news-reel cinema. The parcels offices will be enlarged and better accommodation is to be provided for the railway administrative staff.

At Liverpool Exchange Station the scheme envisaged will cost some £200,000, and as soon as possible reconstruction will begin. The booking office will be re-sited in the buildings at the south end of the concourse, and a new block of buildings constructed to accommodate railway staff.

The final work on the improved power supply for the Liverpool-Southport electrified lines is now nearly completed. The scheme, which has cost over £500,000, involved the closing of Formby Power Station and replacing with sub-station plant and buildings, with a saving in staff, better voltage on track, and improved automatic isolation of faulty sections of track or faulty trains.

East Indian Railway Dinner

Mr. A. R. Gundry's and Colonel R. B. Emerson's speeches before a large gathering

The 45th annual dinner of the East Indian Railway Officers' Dinner Association took place on September 29 at the Connaught Rooms, with Mr. A. R. Gundry in the chair. The following were present (comprising 58 members of the Association and nine guests):—

Members: Messrs. H. S. Allen, H. J. Allinson, J. A. Bell, F. S. Bond, E. L. C. Bowder, G. W. Browne, C. N. Burns, J. D. Donaldson, A. J. Doran, H. G. Emmerson, C. Eyres, J. M. Fenton, J. C. Gibson, A. R. Gundry, P. Hackforth, C. J. Hall, Sir Hugh Hannay, Messrs. R. C. Harvey, L. Hemmings, J. W. C. Holt, H. Howe, G. R. G. Huddleston, D. H. Hughes, R. G. Hughff, A. R. Juilts, G. T. Lemon, E. H. N. Lowther, W. S. McBride, Sir R. Marriott, Messrs. E. Massingham, R. L. Meehan, J. A. Morris, E. G. Moyes.

Dr. W. G. Niblock, Messrs. R. Oakley, H. W. Puttick, A. C. Robertson, F. E. Robertson, J. Robertson, G. W. N. Rose, C. F. Satow, H. H. Saunders, B. Severs, H. J. A. Slator, B. G. Smith, A. G. Stavridi, R. L. Tanner, D. F. Tawse, J. S. Tritton, O. R. Tucker, J. D. J. Turnbull, H. C. Wallace, R. M. Watson, W. J. Watters, R. B. H. Whitby, W. H. Whitney, A. V. Venables, P. Reay Young.

Guests: Colonel Cobb, Mr. G. Collingwood, Colonel R. B. Emerson, Messrs. A. W. Goldsack, F. Lydall, W. J. Oakley, A. P. Parker, M. H. Slator, F. S. Whalley.

Mr. Gundry, in his opening speech, said he felt it was a great honour to be their Chairman, especially as—being an officer of the original State Railways—he was only the second non-company's officer to be offered that distinction. The first non-company's officer so honoured was Sir Robert Marriott, who was, nevertheless, a prominent supporter of the company's tradition of always being "individualistic" and "rather a law unto itself."

Mr. Gundry said that after he had left the E.B.R. to join the E.I.R. in 1928 he had had a most cordial reception and years of the closest co-operation and comradeship with many of those present. It had been with great regret that he had retired from the E.I.R. in 1935. Mass migration of staff, due to partition, had taxed the railways to the utmost.

The Chairman then gave the latest information about the E.I.R., received from Mr. V. Nilakantan, the present General Manager. The new works in hand included the completion of the main-line doubling from Kanpur to Tundla, and duplication of the Lucknow-Moradabad main line. A third work was the regirdering of the Dufferin Bridge (now renamed the Malaviya Bridge), recently completed. As the site at Kanchrapara previously selected for new locomotive-building workshops had been rendered unsuitable by partition, a new site at Mihijam, near Asansol, had been substituted. It had been decided to construct another great bridge over the Ganges, at Mokameh. Certain electrification schemes were under consideration.

Continuing, the Chairman reported an increase in the number attending the dinner compared with 1947. He expressed regret that Mr. Pope, of the former L.M.S.R., and Sammy Dutton, their late dinner honorary secretary, could not be present. He also gave a list of others who had sent messages regretting their absence. He concluded by referring to the tea and cocktail party held on September 30, and organised by Mr. Hackforth and a committee, for the reunion of members of the dinner association and their families at Stewarts Restaurant, Bond Street. Finally, he proposed the toast of the E.I.R., past, present, and future, which was duly honoured.

Later, the Chairman rose to welcome, and give the toast of, the guests, particularly Colonel R. B. Emerson, the last British Chief Commissioner of Railways in India.

In reply, Colonel Emerson expressed his pleasure at being their guest and his thanks for being invited. Colonel Emerson reminded his hearers that he had been a member of the deputation, led by Lord Wavell, to the Secretary of State for Commonwealth Relations, concerning the position of those officers who were under contract with the Governor-General, and not, like those of older State lines, with the Secretary of State for India. He regretted to report that, so far, nothing concrete had come of the deputation. He had, however, been informed that there was every reason to believe that something would come of it eventually.

Sir Hugh Hannay expressed thanks to those who had worked to keep the dinner going, and to Messrs. Rendel, Palmer & Tritton, on behalf of the dinner committee, for allowing it to hold its meetings in its offices. He proposed the health of the Chairman and the Honorary Secretary.

Mr. Lowther, the Honorary Secretary, said, in response, that his first duty was a very painful one, in reporting those whom he named as having passed on. The secretary's duties were very pleasant, and insured contacts with old colleagues, as well as putting many in touch with others. He had about 165 members' addresses but wanted more.

The Chairman later announced that his successor as Chairman next year would be Mr. J. A. Bell. His final words included a tribute to *The Railway Gazette*, for which we thank him.

The Antofagasta (Chili) & Bolivia Railway Co. Ltd.

The annual general meeting of the Antofagasta (Chili) & Bolivia Railway Co. Ltd., was held at Winchester House, Old Broad Street, London, E.C.2, on Tuesday, October 5. Mr. H. C. Drayton, Chairman of the company, presided.

The Chairman, in the course of his statement circulated with the report and accounts, said net receipts from operation of the railway and waterworks during 1947 were £346,753, an increase of £70,529 over the previous year. After adding other income and deducting fixed charges, exchange differences and the appropriations detailed in the net revenue account, the credit balance on that account was £463,586, which it was proposed to carry forward. This sum compared with £418,597, brought forward from 1946. It would be noted that the appropriations included dividends totalling 7½ per cent. (less income tax) on the 5 per cent. cumulative preference stock, bringing the payment of the arrears of dividend on this stock up to June 30, 1938. Gross receipts of £2,358,793 showed an increase of £571,818, which was due to higher tariffs and a greater volume of mineral and general goods traffic carried. Passenger receipts also increased; although there was a decrease of 2½ per cent. in the number of passengers carried, passenger-kilometres increased by approximately 2 per cent.

Working expenses showed an increase of 33 per cent. over 1946. Approximately 68 per cent. of this increase was due to the higher salaries and wages paid to employees and the increased contributions payable under the various Social Laws, and 12 per cent. to the increased cost of fuel oil. Local taxation and operating materials also cost considerably more than in the previous year.

Total stores shipments, excluding fuel, for 1947, amounted to nearly £96,000 c.i.f., which compared with an average of £51,000 per annum for the five years immediately preceding the war. The price of steel rails was increased by approximately 200 per cent. over that paid in 1938, rolling stock spares 100/150 per cent., lubricating oils 100 per cent, timber 250 per cent., lead 600 per cent., pig iron 300 per cent., mild-steel bars and plates 200 per cent., tin 150 per cent., wool waste 150 per cent., cotton waste 125 per cent., wagon paint 250 per cent., steel wire 200 per cent. Ocean freight rates from the U.K. had also increased by 100 per cent. since 1938.

Turning to the net revenue account, the loss on operating the Bolivia Railway Company's lines was £97,314; the net difference between this amount and the sum of £202,120 credited in respect of the holding of the series "B" bonds for the year 1947 was £104,806. This year the company had brought into account income due on those bonds corresponding to the half year ended December 31, 1947, although this was not paid until April 1, 1948, thus making three half-yearly payments in one year.

With regard to the operation of the Aguas Blancas Railway, after taking into account payments made in connection with the lease of that railway, there was a loss in 1946 of £10,904. In 1947 there was a profit of £11,112, which was accounted for by a substantial increase in the tonnage of sulphate of soda transported and by no interest having to be paid on that company's debenture stock, the outstanding balance of which had been redeemed on January 1, 1947.

Turning to the Antofagasta company's balance sheet, the item of "stores, provisions, etc.," showed an increase of £9,000. Cash held in London and New York showed a reduction of £112,000; on the other hand, bills receivable were more by £58,000. Some £145,000 was required to meet British income tax due on January 1, 1948. Cash held in Chile and Bolivia showed the large increase of £147,000, but the bulk of these balances was needed to meet local currency requirements early in 1948.

By the end of the year, the line connecting the Argentine Railways *via* Salta and Socompa with the Augusta Victoria branch had been almost completed, and the directors were negotiating with the Chilean Government for the working of the Chilean section of the line between Augusta Victoria and Socompa, a distance of 181 kilometres. In May this year, a five-year agreement, which was believed to be fair to both parties and which might be renewed for successive periods of five years, had been entered into with the Government, and the railway commenced operating the new section of the line on June 1.

Four years ago, when the shortage of engine power was acute, the Bolivian General Manager had been able to arrange with another railway for the hire of two Garratt locomotives for the Bolivian section. These locomotives had carried the railway over what would otherwise have proved to be a very difficult period. It was being pressed to return these locomotives to their owning line. Despite the high prices now ruling, the board had deemed it necessary to augment the motive power in Bolivia, and an order for six Garratt locomotives, each of approximately 48,000 lb. tractive effort, had been placed and should be delivered to the railways early in 1950.

At the beginning of October, Mr. A. E. Heskett, O.B.E., the General Manager of the Chilean Section, retired after a total of 41 years' service with the railways. In the last 18 years of his service he was the General Manager in Chile, and before this he was for 8 years the company's General Manager in Bolivia. During the time he filled these important posts, and particularly during the difficult war years, his administration had been outstanding. The Board had appointed as General Manager in his place, Mr. William Wells, who had also had long service with the company, and for 18 years was Mr. Heskett's Deputy.

The Chairman said: Since my statement was printed there has been a strike on the Bolivian section of the railways. A commission, on which the men were to have had their representative, was to investigate the company's financial position and report to the Government if a profit had been made on the railway and if the men were entitled to a bonus for the year 1947. The men failed to appoint a representative to this commission and on July 30 the General Manager cabled the Board that the men threatened to strike at midnight on the following day, unless he made a definite promise to pay the bonus for 1947.

As the men had failed to make use of the legal machinery which has to be used in the case of industrial disputes he refused to make any such promise and the men stopped work. The Board gave full support to the attitude of the General Manager as they believed it necessary that the law of Bolivia should be adhered to when negotiating with their employees. On August 2, H.E. the President of the Republic and some of his Ministers, who had been visiting the mines at Catavi and who were returning by a train to La Paz, were held up by strikers. Our General Manager was at Oruro and reports that before allowing the Presidential train to proceed the men extorted a promise that the bonus would be paid. The following day the syndicates in La Paz entered into certain agreements with the administration of the railway and the Board had to accept the position, though with the greatest reluctance.

Twenty-four hours later, however, we received a cable informing us that the Syndicate at Uyuni had repudiated the agreement entered into between the Syndicates at La Paz and the railways, that the strike was resumed and had spread to all railways in the country, including the State lines and the tramways.

On August 7 the Government officials travelled by air to Uyuni and at a meeting with the workmen, at which the Railway Administration was not present or represented, the men's demands were granted and work was resumed that evening. We have now been compelled to pay a bonus for 1947 totalling some £38,000 and, further, we have had to undertake to "freeze" the prices on all goods in our "Pulperia," and to pay the men for the time they were on strike. It is greatly to be regretted that the railways did not receive sufficient support in their efforts to combat the demands of the men, which to the best of our knowledge were illegal.

The report and accounts were adopted.

GERMAN LOCOMOTIVES FOR FINLAND.—The trade agreement recently concluded between Finland and the Soviet-occupied zone in Germany for an exchange of goods to the value of £1,625,000 includes the supply to Finland of locomotives in exchange for cellulose, pyrites, and paper from Finland.

NEW POSTER DISPLAYS.—Mr. Hesketh Hubbard's painting of the bridge at Simonsbath, Exmoor, is the subject of a Southern Region poster dealing with late holidays in the autumn. Various other posters now appearing at Southern Region stations include a reproduction of Mr. Walter E. Spradbery's painting of the Sussex Downs from Arundel Park, and an attractive design to advertise cheap tickets.

STRUCTURAL STEEL FOR BRIDGES.—The British Standards Institution has published a revision of B.S.15, structural steel for bridges, etc., and general building construction. In response to representations which have been made by structural engineers, it has been decided to include a requirement for a minimum yield stress for steel manufactured to this standard and in view of the importance of this addition, it has been considered desirable to give effect to it by the issue of a revision of the standard rather than by an addendum. The opportunity has also been taken to co-ordinate the tolerances for dimensions and weights with the corresponding tolerances adopted in later standards for structural steel. The forms of test-piece have also been modified to conform to those included in B.S.18. Copies of the standard may be obtained from the British Standards Institution, 24, Victoria Street, London, S.W.1, at a cost of 2s. post free.

Railway Finance in Western Germany

Railway goods rates in the British, American, and French zones of occupation of Germany were increased by 40 per cent. on August 16, when rates of long-distance road goods services were similarly increased.

This substantial increase became imperative because of the deterioration of the financial position of the railways resulting from the recent currency reform. Before this, passenger receipts in the bi-zone averaged 16,000,000 marks a day, but that average fell to 6,300,000 marks a day in July, the first full month after the reform; at present, it is about 10,400,000 marks.

In 1947, passenger receipts in the bi-zone were 3,000 million marks, and goods receipts 1,070 million marks. The former position, when goods receipts accounted for about two-thirds of total working receipts and passenger receipts for the remaining third, was therefore reversed. After the currency reform, the passenger traffic decreased by about two-thirds, despite the reduction in fares of 25 per cent. which had been introduced to stem this adverse development. Passenger fares are still some 150 per cent. above pre-war, having been doubled in 1945.

The present volume of passenger traffic enables passenger receipts totalling only about 1,000 million marks yearly to be expected, but it is hoped that the economic revival aimed at will result in its turn in an increase in passenger receipts to 1,400 million or even 1,600 million marks a year. On the other hand, goods traffic has shown a considerable expansion since the currency reform. Allowing for the 40 per cent. increase in rates, it is expected that annual goods receipts will total 1,700 million marks.

Railway working expenditure in the bi-zone is envisaged at 3,500-3,800 million marks. In view of impending increases in wages and costs of materials the true position is difficult to assess; the only certainty is that even after the 40 per cent. increase in the goods rates there will be a deficit of some 500 to 650 million marks. The joint British-American Control Board is said already to have pressed for revised proposals concerning the coverage of the deficit. It has been stated that the increase in the goods rates will bring additional receipts of between 400 million and 500 million marks, just enough to compensate for the enhanced prices of the most essential materials.

It is not believed that a further reduction in passenger fares would bring about any increase in passenger traffic. The shortage of rolling stock is likely to set a limit to the expanding goods traffic. It is thought that the wagon repair programme now in hand—many wagons are being repaired also in Belgium, Czechoslovakia, and Switzerland—and the purchase of wagons abroad are not likely to bring much relief in the near future. The transport capacity of the railways in western Germany is not expected therefore to expand appreciably during the coming months. No contribution towards a reduction in the working expenditure by reducing personnel is expected either, considering also the labour required for the reconstruction of war-damaged lines and structures; in this connection 22,000 railway workers are now being employed, as well as for maintenance deferred during the war years.

The poor state of the track makes it necessary to intensify surveying and other safety measures, in which 25,000 men now are employed. In normal times, the large-scale work of repairing track and replacing old structures would be financed by long-term credits. In the circumstances now prevailing in the three western zones it is difficult to obtain long-term or even medium-term credits, and the administration has been compelled, therefore, either to finance that work by current receipts or reduce the work to the mininum.

A wholesale reduction in the work of reconstruction would affect adversely the traffic development; hence, as a first step towards improving the financial position, the substantial increase in the goods rates proved unavoidable, although it is generally admitted that the moment for its introduction was not propitious in view of the generally unfavourable economic position of the country.

Winter Continental Services

As from October 3, certain alterations to British Railways, Southern Region, Continental services, have come into operation. The "Golden Arrow" service between London and Paris has been accelerated, and passengers by this service gain thirty minutes on the journey to Paris, the train having been retimed to leave Victoria at 10.30 a.m. This departure time is half an hour later than previously, but gives the same arrival time in Paris. In the return direction, passengers will leave Paris, Nord, at 12.15 p.m. instead of at noon, and the overall journey time has been reduced from 7¾ hr. to 7¼ hr.

From October 31, the "Night Ferry" service London-Paris will be retimed to leave Victoria at 9 p.m. instead of at 9.30 p.m., and the journey time between London and Paris will be reduced from 12 hr. to 11¼ hr. Commencing October 3, the departure time from Paris, Nord, will be made one hour later (from 8.30 p.m. to 9.30 p.m.), arriving at Victoria at 9.10 a.m. the next morning, as at present.

Five routes and six services will be operated between London and Paris during the winter, as follow:—

Dover—Calais route ...	Daily (Sundays included), two services in each direction
Dover—Dunkerque route	The "Night Ferry"; Service every night in each direction *
Folkestone—Calais route	Daily service (Sundays included) in each direction
Newhaven—Dieppe route	Day service (Daily—Sundays included) in each direction*
Southampton-Havre route	Night service (every Monday and Friday from London and Southampton; return service every Tuesday and Saturday from Paris and Havre)

* Not Christmas day

The direct service between Southampton and St. Malo will cease to operate, and passengers for St. Malo, Dinard and Brittany, will travel *via* Jersey. The Folkestone-Boulogne service will not run during the winter, and on the Dover-Ostend route there will be one service only, in each direction, leaving Victoria at 9 a.m. and Ostend at 2.30 p.m. daily.

RAIL TRAFFIC FROM GYPSUM MINES.—During a recent fortnight, 11,096 tons of gypsum was conveyed by the Southern Region, to many parts of South-East England and is typical of the present-day volume of traffic for this commodity. Gypsum is chemically known as calcium sulphate and is used in great quantities for the manufacture of plaster boards; a thriving industry of gypsum mining exists at Mountfield, in the densely-wooded country between Robertsbridge and Battle in East Sussex and employs some four hundred men. In addition to the raw mineral, over 2,450 tons of plaster was conveyed by rail in the same period.

Railway Students' Sheffield Convention

Group at Sheffield Town Hall during the Railway Students' Association Convention, held at Crewe Hall, Sheffield, between September 17 *and* 21, *and reported in our September* 24 *and October* 1 *issues*

Left to Right: Messrs. R. C. Moore, General Manager, Sheffield Corporation Transport; A. F. Wallis, Honorary Organising Secretary, R.S.A.; C. E. R. Sherrington, Vice-President, R.S.A.; the Lady Mayoress and Alderman W. E. Yorke, Lord Mayor of the City of Sheffield; Messrs. L. W. Orchard, Chairman, R.S.A.; W. B. Carter, District Goods & Passenger Manager, Sheffield, London Midland Region

Photo [*"Sheffield Telegraph & Star"*

British Transport Commission Statistics

Summary of the principal statistics for the four-week period ended July 11

A preliminary note to No. 7 of the series of *Transport Statistics*,* published by the British Transport Commission, comments on the small increase in receipts from railway working, as compared with the additional revenue expected from the raising of rates and fares in 1947. The increase in the seventh period was only £2,728,000, or 11 per cent., little more than half of the expected improvement. Our table of receipts has been rearranged to include figures for Steamships and Hotels & Catering, which were higher by 9 per cent. and 6 per cent. respectively.

Passenger journeys originating, in the month of June, declined by 9,491,000, or 10.7 per cent.

Freight tonnage originating, in the July period, was up 6·5 per cent., but merchandise forwardings were down 6·7 per cent., the decrease in the Western Region alone being 121,000 tons or 14 per cent. The North Eastern and Scottish Regions had large increases in minerals and coal. More train miles of every description were run, the total number being 5 per cent. above the figures for both June, this year, and July, 1947. Freight trains moved a little more freely, but a speed of 8·71 m.p.h. is disappointing for a summer period. The North Eastern and Scottish Regions continue to set the pace for the rest of the country.

The rolling stock position was better in respect of locomotives and passenger carriages, but 11,610 fewer wagons were available at the end of the period than in 1947. The number of wagons under repair was 143,468, or 12 per cent. of the total operating stock. There were 6,100 more wagons out of traffic at July 11, than at June 13.

Inland waterways again had decreases in tonnage and ton-miles. Its Northern Divisions carried more traffic, but the Southern Divisions lost ground.

London Transport again originated over 350 million passenger journeys in the July period, 6 per cent. more than in 1947. The corresponding takings increased in the same ratio.

The staff figures form the subject of a separate article.

* British Transport Commission Statistics, 1948 Series No. 7. Period to July 11. London: British Transport Commission Price 1s.

STAFF

—	Commission's head office	British Railways	London Transport	Hotels and Catering	Steamships Marine and Docks	Inland Waterways	Railway Clearing House	Total
Administrative ...	123	80,439	4,798	1,803	1,715	674	625	90,177
Operating ...	—	355,100	61,002	—	13,412	2,106	—	431,620
Maintenance and construction ...	—	213,663	30,987	—	5,595	2,388	—	252,633
Others	12	13,807	3,987	14,570	—	—	353	32,729
Total ...	135	663,009	100,774	16,373	20,722	5,168	978	807,159

1. BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS

—	Four weeks to July 11		Inc. or dec.	Aggregate to July 11		Inc. or dec.
	1948	1947		1948	1947	
	£000	£000	£000	£000	£000	£000
British Railways—						
Passengers	11,327	10,865	+ 462	62,886	57,596	+ 5,290
Parcels, etc., by passenger train... ...	2,409	2,147	+ 262	15,474	13,563	+ 1,911
Merchandise	6,118	5,694	+ 424	46,129	37,428	+ 8,701
Minerals	2,233	1,711	+ 522	15,519	10,696	+ 4,823
Coal & coke	5,235	4,171	+ 1,064	36,040	23,950	+ 7,090
Livestock	44	50	− 6	447	447	—
	27,366	24,638	+ 2,728	176,495	148,680	+ 27,815
Steamships	1,009	923	+ 86	4,297	3,853	+ 444
Inland Waterways	119	126	− 7	884	755	+ 129
Hotels & Catering	1,058	993	+ 65	6,951	6,421	+ 530
London Transport—						
Railways	1,081	1,021	+ 60	7,773	6,994	+ 779
Buses & coaches	2,428	2,272	+ 156	16,817	14,898	+ 1,919
Trams & trolleybuses	852	820	+ 32	6,025	5,457	+ 568
	4,361	4,113	+ 248	30,615	27,349	+ 3,266
Total	33,913	30,793	+ 3,120	219,242	187,058	+ 32,184

2. BRITISH RAILWAYS

(A) Passenger Journeys Originating

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.
Ordinary fares	1,453,000 (−19·67)	905,000 (− 9·62)	2,111,000 (−6·68)	841,000 (−0·49)	180,000 (−51·70)	373,000 (−20·76)	5,863,000 (−13·28)
Monthly return	6,610,000 (−25·10)	1,939,000 (−35·56)	7,972,000 (−14·23)	2,080,000 (−24·26)	605,000 (−69·27)	1,223,000 (−32·23)	20,429,000 (−26·11)
Excursion, week-end, cheap day, etc.	2,292,000 (+184·65)	1,287,000 (+180·84)	1,909,000 (+160·34)	675,000 (+192·53)	667,000 (+40·19)	535,000 (+261·36)	7,365,000 (+158·30)
Workmen	7,404,000 (−3·94)	1,955,000 (−1·08)	6,272,000 (+5·07)	1,909,000 (−4·59)	907,000 (−19·72)	999,000 (−4·87)	19,446,000 (−1·96)
Other descriptions ...	1,503,000 (−11·55)	973,000 (−13·39)	1,655,000 (−15·62)	821,000 (+1·72)	370,000 (−29·85)	722,000 (+20·59)	6,044,000 (−10·03)
Season tickets	5,181,000 (−27·70)	2,091,000 (−20·78)	9,068,000 (−7·92)	1,981,000 (−20·64)	536,000 (−35·67)	1,455,000 (−32·50)	20,312,000 (−19·20)
Total	24,443,000 (−12·74)	9,150,000 (−10·36)	28,987,000 (−3·59)	8,307,000 (−8·98)	3,265,000 (−38·48)	5,307,000 (−14·80)	79,459,000 (−10·67)

(B) Freight Tonnage Originating

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Tons + or − over 1947 Per cent.	Tons + or − over 1947 Per cent.	Tons + or − over 1947 Per cent.	Tons + or − over 1947 Per cent.	Tons + or − over 1947 Per cent.	Tons + or − over 1947 Per cent.	Tons + or − over 1947 Per cent.
Merchandise...	1,269,000 (−4·36)	743,000 (−14·10)	257,000 (−9·06)	466,000 (−4·75)	564,000 (+1·26)	587,000 (−9·25)	3,886,000 (−6·76)
Minerals	1,634,000 (+3·17)	687,000 (+10·82)	115,000 (+2·30)	716,000 (+1·69)	830,000 (+18·70)	650,000 (+21·17)	4,632,000 (+8·84)
Coal & coke	4,365,000 (+7·83)	1,929,000 (+10·24)	247,000 (−3·09)	2,058,000 (+16·64)	2,350,000 (+12·83)	1,643,000 (+10·80)	12,592,000 (+10·62)
Livestock	9,000 (−10·68)	9,000 (+3·69)	2,000 (+32·92)	4,000 (−47·44)	3,000 (−53·70	10,000 (−34·61)	37,000 (−24·04)
Total	7,277,000 (+4·42)	3,368,000 (+3·84)	621,000 (−4·67)	3,244,000 (+9·40)	3,747,000 (+12·02)	2,890,000 (+7·79)	21,147,000 (+6·51)

(C) Net Ton Miles

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.
Merchandise & livestock ...	174,013,000 (−8·81)	101,159,000 (−12·46)	23,546,000 (−10·54)	71,325,000 (+2·41)	46,321,000 (−5·35)	77,260,000 (−12·71)	493,624,000 (−8·55)
Minerals	131,219,000 (+4·10)	73,688,000 (+25·03)	13,355,000 (−15·08)	90,652,000 (+0·40)	33,674,000 (+22·37)	39,131,000 (+3·54)	381,719,000 (+7·13)
Coal & coke	291,487,000 (+4·53)	127,548,000 (−8·02)	27,106,000 (−12·31)	179,229,000 (+10·26)	70,940,000 (+12·72)	67,413,000 (+4·65)	763,723,000 (+3·44)
Total, all classes of traffic...	596,719,000 (+0·17)	302,395,000 (−3·44)	64,007,000 (−12·27)	341,206,000 (+5·81)	150,935,000 (+8·28)	183,804,000 (−3·63)	1,639,066,000 (+0·28)

(D) Train Miles

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.	+ or − over 1947 Per cent.
Coaching train miles—							
Loaded	4,796,000 (+10·35)	2,873,000 (+5·01)	4,291,000 (+5·90)	2,606,000 (+5·84)	1,142,000 (+7·58)	1,872,000 (+7·10)	17,580,000 (+5·98)
Empty	189,000 (+6·18)	145,000 (+3·80)	126,000 (+2·43)	102,000 (+14·60)	59,000 (+23·86)	73,000 (+6·93)	692,000 (+7·01)
Total loaded & empty ...	4,985,000 (+10·01)	3,018,000 (+4·95)	4,417,000 (+5·78)	2,708,000 (+6·15)	1,201,000 (+8·84)	1,945,000 (+7·09)	18,274,000 (+6·01)
Freight train miles—							
Loaded	3,026,000 (+0·76)	1,622,000 (−1·22)	535,000 (−4·35)	1,689,000 (+4·91)	919,000 (+3·59)	1,399,000 (−3·26)	9,190,000 (+0·46)
Empty	558,000 (+8·82)	206,000 (+8·84)	13,000 (+9·87)	337,000 (+0·05)	197,000 (+5·60)	225,000 (+17·89)	1,536,000 (+7·56)
Total loaded & empty ...	3,584,000 (+1·94)	1,828,000 (−0·18)	548,000 (−4·03)	2,026,000 (+4·07)	1,116,000 (+3·94)	1,624,000 (−0·80)	10,726,000 (+1·42)
Total coaching & freight train miles—							
Loaded	7,822,000 (+6·43)	4,495,000 (+2·66)	4,826,000 (+4·27)	4,295,000 (+5·76)	2,061,000 (+6·25)	3,271,000 (+2·09)	26,770,000 (+4·88)
Empty	747,000 (+8·26)	351,000 (+6·50)	139,000 (+2·96)	439,000 (+3·05)	256,000 (+17·77)	298,000 (+12·41)	2,230,000 (+7·52)
Total loaded & empty ...	8,569,000 (+6·56)	4,846,000 (+2·95)	4,965,000 (+4·51)	4,734,000 (+5·24)	2,317,000 (+7·20)	3,569,000 (+3·35)	29,000,000 (+5·08)

(E) Freight Train Miles per Train Hour

Region											Total	
London Midland		Western		Southern		Eastern		North Eastern		Scottish			
1948	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948	1947
7·62	7·25	9·49	8·73	8·86	8·80	8·35	7·95	10·57	10·12	10·28	10·27	8·71	8·33

(F) Locomotive Coal Consumption

—	Region												Total	
	London Midland		Western		Southern		Eastern		North Eastern		Scottish			
	Tons	+ or − over 1947 Per cent.	Tons	+ or − over 1947 Per cent.	Tons	+ or − over 1947 Per ce.t.	Tons	+ or − over 1947 Per cent.	Tons	+ or − over 1947 Per cent.	Tons	+ or − over 1947 Per cent.	Tons	+ or − over 1947 Per cent.
Tonnage consumed ...	350,000	(+2·78)	168,000	(+8·08)	74,000	(+2·60)	202,000	(+4·42)	89,000	(+1·88)	169,000	(+1·38)	1,052,000	(+3·58)
Lb. per engine mile ...	63·92	(−0·73)	51·66	(+5·56)	52·93	(+3·89)	64·78	(−0·25)	60·55	(−3·24)	69·88	(−0·01)	61·41	(+0·61)

(G) Rolling Stock Position

	Operating stock	Number under repair	Serviceable stock	Serviceable stock in 1947
Locomotives ...	20,012	3,649	16,363	16,089
Coaching vehicles	55,227	6,007	49,220	48,011
Freight wagons ...	1,191,615	143,468	1,048,147	1,059,757

3. INLAND WATERWAYS

Tonnage of traffic and ton-miles

	Tonnage	+ or − over 1947 per cent.	Ton-miles	+ or − over 1947 per cent.
General merchandise	280,000	−10·14	6,07 ,000	−10·90
Liquids in bulk ...	123,000	−2·90	2,696,000	−7·40
Coal, coke, patent fuel and peat ...	430,000	+6·97	6,379,000	−1·09
Total (all classes of traffic)	833,000	−0·86	15,145,000	−6·36

4. LONDON TRANSPORT

(A) Passenger Journeys Originating

	Number	+ or − over 1947 per cent.
Railways	47,888,000	(+3·51)
Buses & coaches	210,380,000	(+7·36)
Trams & trolleybuses ...	91,887,000	(+4·46)
Total	350,155,000	(+6·04)

(B) Rail and Road Car Miles

	Miles	+ or − over 1947 per cent.
Railways	17,776,000	(+9·73)
Buses & coaches	24,301,000	(+7·40)
Trams & trolleybuses ...	8,752,000	(+4·73)
Total	50,829,000	(+7·73)

(C) Rolling Stock Position

	Operating stock	Number under repair	Serviceable stock	Serviceable stock in 1947
Railway vehicles ...	3,948	331	3,547	3,356
Buses & coaches ...	7,415	870	6,545	5,830
Trams & trolleybuses	2,628	281	2,347	2,312

CANADIAN PACIFIC RAILWAY EARNINGS.—Canadian Pacific Railway gross earnings in August amounted to $30,941,857, an increase of $4,332,329 on those for August, 1947. With expenses of $29,029,114, net earnings amounted to $1,912,743, an increase of $650,665.

Notes and News

Diesel-Electric Rail Traction Engineer Required.—An engineering firm in the Midlands requires a diesel-electric traction engineer. See Official Notices on page 423.

Senior Draughtsman (Engineering) Required.—A senior draughtsman (engineering) is required by the East African Railways & Harbours for two to four years, with prospect of permanency. See Official Notices on page 423.

Institute of Transport Presidential Address.—Mr. D. R. Lamb will deliver his presidential address on Monday, October 18, 1948, at 6 p.m., at the Jarvis Hall, Royal Institute of British Architects, 66, Portland Place, London, W.1. Before the meeting (at 5.30 p.m.) the President will hold an informal reception of members and visitors.

Pullman Car Company.—Notice has now been given to redeem at par on December 31 the outstanding 5 per cent. income stock of the Pullman Car Company. The company has created 500,000 of 4½ per cent. cumulative redeemable preference shares of £1 each, and of these, 386,000 are to be issued. Holders of the income stock are invited to convert their holdings into the new preference shares on the basis of 98 preference shares for every £100 of income stock. The capital of the company issued or to be issued consists of £386,000 in 4½ per cent. preference shares, £187,000 in "A" ordinary shares of £1 each, and £50,000 in "B" ordinary shares of 2s. each.

Railway Queen Crowned.—Britain's Railway Queen was crowned before an audience of 40,000 in the Belle Vue Stadium, Manchester, on September 25. Mr. G. L. Darbyshire, C.B.E., Chief Regional Officer, London Midland Region, British Railways, and Mr. J. G. Baty, General Secretary, A.S.L.E.F., crowned Miss Beryl Parker, of Hull. Many Regional Officers were present, including Mr. Percy Killick, M.P.; Mr. E. Popplewell, M.P.; Alderman T. H. Adams, Locomotive Inspector and Deputy Lord Mayor of Manchester; Mr. J. B. Figgins, General Secretary, N.U.R.; Mr. F. Ballan and Mr. Royce Smith of the Railway Executive. The Minister of Transport, sent a telegram of congratulation to the retiring Queen, Miss Janet Taylor, and a telegram was received from Sir Eustace Missenden, Chairman of the Railway Executive, conveying greetings and good wishes.

Southern Region Winter Excursions.—British Railways hope to run the greatest number of excursions since before the war during this winter and on the Southern Region the first schedules have been drawn up. After the close of the holiday season, more trains will be available for such purposes and it is planned to provide better excursion services than during the summer.

Scammell Lorries Annual Staff Ball.—The annual ball and cabaret organised by the staff of Scammell Lorries Limited is being held at the Town Hall, Watford, on October 22, from 8 p.m. to 2 a.m. The function is entirely self-supporting, and, as on previous occasions, local charities will benefit. Business friends and associates will be welcomed, and tickets at £1 1s., inclusive of running buffet, can be obtained from Mr. L. N. Wood, Scammell Lorries Limited, Watford, Herts.

Opening of New Thurgoland Tunnel.—The new tunnel at Thurgoland, near Penistone, constructed to facilitate the electrification of the Eastern Region main line from Manchester to Sheffield and Wath, was brought into use on Sunday last, October 3. The tunnel, which carries the down line, is 350 yd. long, and its completion has been retarded by the prevailing abnormal conditions. The construction of a separate single-line tunnel was necessitated by the difficulty in obtaining sufficient clearance in the old tunnel for the overhead electrification equipment for two tracks. The up line was slewed to a new alignment in the middle of the old tunnel. The engineers were granted an occupation from 7 a.m. to 6 p.m., on October 3, to complete the work. The tunnel is driven through rock, overlaid with shale and earth. Construction was complicated by the necessity of avoiding any interruption in traffic on the adjacent main line. Small splitting charges were used to dislodge the rock, and no blasting was undertaken when trains were passing. The tunnel is lined with concrete, but the portals are finished in masonry. Although the railway is to be electrified, provision has been made for steam trains, and the roof of the tunnel is protected by a continuous steel smoke plate. The tunnel is the first major new work to be completed under national ownership.

Siamese Purchasing Mission for Britain.—It is believed that the Siamese government will accept the British government's recent invitation to send a purchasing mission to Britain. It is understood that Siam requires railway equipment of all kinds, including locomotives, wagons, rails, wagon wheels, and tyres; machine tools for railway workshops; signalling equipment; electrical plant; boilers; diesel engines; and materials for building and repairing bridges.

L.M.R. Dramatic Society.—On Friday and Saturday of last week the British Railways, London Midland Region (London) Dramatic Society presented the farce "See How They Run" at King George's Hall, London, W.C.1. The production was of a very high standard, and was received enthusiastically by the audience. A loss of voice by one of the cast, Miss Eileen McCarthy, at the final rehearsal on Friday afternoon, fortunately was overcome in the evening performance.

Another Record Tourist Month.—Latest figures released by the British Travel Association on the record-breaking 1948 season show that 68,421 overseas visitors arrived in Britain during August. This is an increase of 34 per cent. on the 1936-1938 average for the month and 40 per cent. higher than the total for August last year. The figure does not include a number of Empire visitors for whom statistics are not yet available. Nearly 12,000 of the August visitors were dollar-spending Americans, which compares with 7,000 visitors from the U.S.A. in the same month last year.

Scottish Machine Tool Meeting.—At the annual meeting of the Scottish Machine Tool Corporation on September 16, Mr. J. P. Reynolds, Chairman & Managing Director, said that a greater volume of orders for home and export would be secured if they could offer better delivery times, but under present conditions it was not possible to anticipate any real improvement in that way. Results for the year could be considered very satisfactory, however, bearing in mind the continuing difficulties experienced due to shortages of essential materials. The profits for the year, after charging depreciation of fixed assets, etc., but before taxation was allowed for, amounted to £69,070, against £70,382 in the previous 12 months. Taxes absorbed £43,000 and the net profit of £26,043 was practically the same as last year. The final dividend is 5 per cent., less income tax, again making 8 per cent. for the year.

Allied Ironfounders Exhibition Train.—Two coaches, entirely sheathed in cream enamel sheet, have been equipped by Allied Ironfounders Limited as an exhibition train for the display of the company's domestic heating appliances. On October 4 the exhibition train was opened to the public on platform 4 at Paddington by Lord Huntingdon, Joint Parliamentary Secretary, Ministry of Agriculture & Fisheries. The train will remain at Paddington for public inspection until October 16, when it will begin a tour of the principal towns in the country lasting until

Britain's Railway Queen Crowned

Miss Beryl Parker, Railway Queen for 1948-49 *receives the crown from Mr. G. L. Darbyshire, Chief Regional Officer, London Midland Region, British Railways*

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

A DIESEL-ELECTRIC Rail Traction Engineer is required by a large Midland Engineering concern. Salary up to £700 per annum according to qualifications and experience. Reply age, etc., to Box 474, T. & G., 101, St. Martin's Lane, London, W.C.2.

THE FIRST PASSENGER RAILWAY. By Charles E. Lee. A history of the Swansea & Mumbles Railway, which extends over 136 years. Cloth. 8½ in. by 5½ in. 91 pp. Illustrated. *5s. By post 5s. 3d.*

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

SENIOR DRAUGHTSMAN (ENGINEERING) required by the East African Railways and Harbours for 2 to 4 years with prospect of permanency. Salary £710 a year rising to £810 a year. Free passages and quarters. Superannuation fund. Candidates must have a sound knowledge of engineering works and building construction; and of the design of structural steel and reinforced structures. A knowledge of railway yard layout an advantage. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/23736 (3D) on both letter and envelope.

MECHANICAL APPLIANCES FOR HANDLING RAILWAY TRAFFIC. By G. Bulkeley. An explanation of the employment of mechanical apparatus for handling and carting general goods. Cloth. 7½ in. by 5 in. 132 pp. Illustrated. *5s. By post 5s. 3d.*

SECTIONED PERSPECTIVE VIEW OF LOCOMOTIVE FRONT END. A notable drawing of L.M.S.R. class "7P" 4-6-2 locomotive of the latest type. Reprinted from *The Railway Gazette*, June 15, 1945. *Price 2s. 6d. Post free 2s. 8d.*

THE WORK OF THE RAILWAY CLEARING HOUSE, 1842-1942. An account of the development and extent of the activities of this famous British railway institution. Paper. 9½ in. by 6 in. 24 pp. Illustrations. *2s. 6d. By post 2s. 8d.*

April 30 next. One of the coaches is fitted up as a cinema for the showing of a specially produced sound film on heat in the home. It was decided to install the display in a train as the most satisfactory means of reaching housing officials, builders, and the public throughout the country.

Institution of Mechanical Engineers.—The annual dinner of the Institution of Mechanical Engineers is being held at the Dorchester Hotel, Park Lane, London, W.1, on October 21, at 7 for 7.30 p.m.

Half-Day Excursions.—Since the reintroduction of half-day and evening excursions on the London Midland Region of British Railways, 141,052 passengers have availed themselves of the facilities. The next half-day excursion planned in the London area is from Willesden and Queens Park to Southend on October 9.

Sunday Excursion to Bournemouth.—The Southern Region Sunday excursion to Bournemouth, which first ran on September 19, proved so popular that it is being continued every Sunday until October 31. A feature of the excursion is that a dining car is provided for lunch on the outward journey and supper on the return. The train leaves Waterloo at 11.12 a.m. and calling at Wimbledon, Surbiton and Woking, arrives Bournemouth at 1.41 p.m. The return journey commences at 7.50 p.m.

Reduced Aer Lingus Fares.—When Aer Lingus Teoranta winter timetables come into force on October 31, reduced fares will be introduced on most of its main routes. The Dublin—Glasgow fare will be lowered from £10 16s. to £9 9s. and there will be reductions for the Dublin—Manchester and Dublin—Amsterdam services. On the Dublin to London route, a 10-day excursion fare of £12 12s. will be charged for travel in mid-week on Tuesdays, Wednesdays, or Thursdays. Three-day excursions, valid for any day of the week, are being introduced on the Dublin—Liverpool, Dublin—Manchester, and Dublin—Glasgow routes.

London Transport Country Bus Map.—The first country bus folder map to be produced by London Transport is now available to the public at London Transport enquiry offices, waiting rooms, and garages in the country bus area. Similar in size to the folder maps already issued for London Transport central bus, railway, tram and trolleybus, and Green Line services, the new map has taken about a year to prepare, and because of the large area served by the country buses, the map is in two sections. To help passengers, the 101 routes in the northern area are printed on one side of the sheet, with the 98 southern area services on the reverse; routes are shown in the traditional country bus green. Central bus connections are picked out in red, and interchange points with buses operated by the Thames Valley, Eastern National, Maidstone & District, Aldershot & District, and Southdown services are indicated by distinctive symbols. A series of special town plans shows stopping places in eight important country towns where many routes converge, namely: Dartford, Gravesend, Hertford, Hemel Hempstead, St. Albans, Slough, Staines, and Watford.

Institution of Railway Signal Engineers.—The Institution of Railway Signal Engineers' annual dinner and dance will be held on Friday, October 29, at the Hamilton Hall, Abercorn Rooms, Great Eastern Hotel, Liverpool Street Station, London. Reception by the President, Mr. A. Moss, will be at 6 p.m., followed by dinner at 6.30 p.m. and dancing from 8 to 11 p.m. Guests of the Institution will include Mr. John Benstead, Member of the British Transport Commission, and Mr. C. K. Bird, Chief Regional Officer, British Railways, Eastern Region.

Federation of British Industries.—As from September 27, the Federation of British Industries has taken over additional office accommodation at 41, Buckingham Palace Road, London, S.W.1. This is now the address of the following departments: Overseas Director (Mr. C. F. I. Ramsden); Assistant to Overseas Director (Mr. R. Hunt Taylor); Empire Department (Mr. M. J. Watt and Miss A McSwiny); Europe & Near East (Mr. A. W. Cowe); America & Far East (Mr. W. V. Jenkins and Mr. R. C. Lindsell); Trade Openings (Miss E. Smith); Travel (Miss M. Lee); London & South Eastern Region (Major General R. Briggs); Assistants (Messrs. M. Moran, E. H. Elton, T. S. Gibbons and N. G. Tagg). All communications for these departments should be sent to the new address, though the telephone number will be as previously. Whitehall 6711.

Arts & Crafts Exhibition at Swindon.—A duchesse set made by a London locomotive fireman, a model clipper and chimes made by a goods checker at Paddington Station, a toy fire-engine and butcher's shop made by a turner at Swindon Works, a petit point picture in silks worked by a railway inspector at Llantrisant, Glamorgan, and a foot loom made by a locomotive inspector at Swindon, are among the 760 examples of the off-duty handiwork of the staff of British Railways, Western Region, on view at its 14th annual Arts & Crafts Exhibition at Swindon swimming baths this week. The object of the exhibition is to encourage the staff to use some of their leisure for cultural pursuits, and the best work is rewarded by the presentation of silver and bronze medals and certificates of merit; eight trophies are held for one year by the winners of various sections. The exhibition, which was open from 5 p.m. to 9 p.m. on October 4, will be on view between 10 a.m. and 9 p.m. from October 5 to 8, and from 10 a.m. to 5 p.m. on October 9.

United States Freight Rate Increase Request.—The United States railway industry has asked the Inter-State Commerce Commission for permission to raise present freight rates by 8 per cent.

Increased Traffic to Ireland.—During the six months from March 1 to August 31, 66,133 more passengers travelled by the two London Midland Region routes to Ireland (Holyhead-Kingstown and Heysham-Belfast) than in the same period last year. Passengers travelling from Ireland to England were 61,565 more. Grand totals for the six months period are 353,789 outward and 333,924 inward.

Valuation of Transport Securities.—After considering the arguments and evidence submitted at the hearings on September 14, 15 and 16, 1948, of applications by the British Transport Commission, pursuant to Section 17 (3) of the Transport Act, 1947, the Transport Arbitration Tribunal has issued Orders, dated September 24, 1948, determining the values of the following securities specified in Part II of the Fourth Schedule to the Act:—

Name of body by which security was issued	Nature of security	Value per £100 nominal £ s. d.
The East Kent Light Railways Company	5 per cent. debenture stock	55 0 0
	Ordinary shares	2 10 0
The Kent & East Sussex Light Railway Company	4 per cent. debenture stock	10 0 0
	Ordinary shares	0 5 0
The Easton & Church Hope Railway Company	4½ per cent. debenture stock	0 5 0
	5 per cent. preference stock	0 5 0
	Ordinary shares	0 5 0

An application for determination of the value of the 6 per cent. debenture stock, 3½ per cent. debenture stock, 5 per cent. preference shares and the ordinary shares of the Trent Navigation Company was heard on September 17, 1948, and the decision of the Tribunal concerning these securities will be announced later.

Locomotive Inspectors Film Show.—A film show for Eastern Region locomotive inspectors, the first of its kind to be arranged in the Region, recently was held at Liverpool Street. The programme was opened by Mr. G. A. Musgrave, Locomotive Running Superintendent, Western Section, and the films shown included the Paul Barralet production "Scottish Express," the G.B.I. film "Steam Engine" and two former L.M.S.R. productions "Men of the Footplate" and "Little and Often," the last-named illustrating methods of locomotive firing. During the interval, locomotive inspectors were addressed by Mr. C. K. Bird, Chief Re-

gional Officer of the Eastern Region, and the film show was closed with an address by Mr. L. P. Parker, Locomotive Running Superintendent, Eastern Section.

Scottish Region Seat Reservations.—The arrangements for seat reservation for individual passengers by certain trains, are being continued and extended with the winter train services time table in the Scottish Region. Additional trains from Glasgow (Central), on which individual seat reservations may be made, are the 9.25 p.m. for Rugby and Euston and the 10.30 p.m. to Euston.

Canadian Railways Freight Rate Application.—Seven provincial Governments have notified the Transport Commissioners that they will apply on September 21 for a stay in the hearings of the application by the Canadian Railways for a further freight rate interim increase of 15 per cent. and a permanent increase of 20 per cent. The railways obtained an increase of 21 per cent. last March and since then have been compelled to increase wages to avoid a strike.

Film Show for Mutual Improvement Class.—On Sunday, October 10, at 10.30 a.m., a special film show, arranged for the King's Lynn Mutual Improvement Class of the Eastern Region, British Railways, will be given in the Pilot Cinema at King's Lynn. The programme will include the following films:—"Distillation of Oil"; "An English Oil Field"; "First Principles of Compression Ignition Engines"; "First Principles of Lubrication"; "Springs: Study of the Suspension System of a Motor Car"; "The Flying Scotsman." A special train has been arranged for members of the mutual improvement classes at Bury, Cambridge, Ely and March to attend, and in the audience there will be representatives from various educational authorities and the press.

Forthcoming Meetings

October 12 (*Tues.*).—The Institution of Mechanical Engineers, Storey's Gate, St. James's Park, London, S.W.1, at 6 p.m. Automobile Division annual general meeting, induction of the new Chairman of the Division, Mr. R. Pentony; followed by an ordinary general meeting and an address by the Chairman.

October 12 (*Tues.*).—Institute of Public Administration, in the Great Hall, King's College, Strand, W.C.2, at 6.15 p.m. "Men and Measures" lecture series: "Efficiency in the Socialised Industries," by Mr. Ian Mikardo.

October 13 (*Weds.*).—Institute of Traffic Administration, Edinburgh & East Scotland Centre, in the Royal British Hotel, Princes Street, Edinburgh, at 7.30 p.m. "National Insurance (Industrial Injuries) Act, 1946," by Mr. R. Scott.

October 13 (*Weds.*).—The Institute of Welding, North London Branch, at the Enfield Technical College, at 7.30 p.m. "Thermit Welding," by Mr. A. Baines.

October 15 (*Fri.*).—Institution of Railway Signal Engineers, at the London Transport Signal School, Earls Court Station, S.W.5, at 6.15 p.m. "Layout of Signals," by Mr. W. H. Challis.

October 16 (*Sat.*).—The Permanent Way Institution, Manchester & Liverpool Section, at the Temperance Institute, 65, London Street, Southport, at 2.30 p.m. "Flat Bottom Track," by Mr. H. Ormiston.

Railway Stock Market

International uncertainties have led to no nervous selling in stock markets, where jobbers are none too well supplied with stock, and consequently prices in most sections have responded readily to moderate improvement in demand. British Funds were in the lead, due partly to first reinvestment of the £43,000,000 "pay-out" money in respect of Argentine railway ordinary and preference stocks. The bulk of this is expected to go into gilt-edged, pending clarification of the investment outlook, and some into Brazilian rails, which over a period may have interesting possibilities as a speculation, assuming, of course, that there are take-over developments in respect of Leopoldina and G.W. of Brazil. This week's rally in San Paulo ordinary stock was due to the view that the London visit of Senor Machado, Brazilian Government representative, to discuss Brazil's sterling balances may bring nearer negotiations concerning compensation for San Paulo's "unrecognised" capital. Road Transport shares have been active although best levels were not fully held. Tillings at one time touched the new high level of 120s. 6d. The market is assuming that an official statement is imminent indicating the directors' views as to the future of the company and how it is proposed to deal with the £24,800,000 from the British Transport Commission. A capital return to shareholders of as much as £5 per £1 share is possible, according to some market views. B.E.T. deferred stock remained active, and although fluctuating somewhat sharply, was prominent earlier in the week with an advance of £30 to £1,960 in the belief that before long negotiations will start with British Transport for the taking-over of transport assets.

Consols and Treasury 2½ per cents. have been active, with 2½ per cent. Savings Bonds and 3½ per cent. War Loan also prominent in the general rise in gilt-edged. Nationalisation stocks also participated, 3 per cent. Transport (1978-88) reaching the new high level of 99⅜. The City is taking the view that if there is a rearmament drive on any considerable scale it may lead to a modified revival of the "cheap money" policy. The recently-issued 3 per cent. "Farmers" loan now commands a premium of £3½ over the issue price, and a premium of at least a point is being predicted for the new Australian loan when dealings commence.

Rise in San Paulo to 175 was a feature in foreign rails, but other Brazil rails quietened down after earlier activity. Leopoldina was 11¼, the preference stock 37¼, and the debentures 68¼, while Leopoldina Terminal debentures were 64. At the time of writing, G.W. of Brazil shares are changing hands around 107s. Uruguayan rail stocks have remained firmly held. Manila "A" debentures attracted some attention around 85 with the preference shares 8s. 9d. Elsewhere, Mexican Railway 6 per cent. debentures have strengthened to 87½. Revived take-over talk led to a rise in Beira Railway bearer shares to 61s. 10½d. Antofagasta ordinary eased to 10 with the preference stock 61, and United of Havana 1906 debentures were 16½. Canadian Pacifics have been more active and improved to 21¼.

Iron and steel shares showed general improvement despite the nationalisation threat. This is because the prevailing belief is that in any case nationalisation compensation would have to be on a reasonably fair basis and that current market prices very well may prove to be moderate. Shares of locomotive builders and engineers have been firm and more active, with North British Locomotive 24s. 9d., Beyer Peacock 22s. 6d., and Vulcan Foundry 27s. 9d. Charles Roberts advanced strongly to £8 on continued market hopes that a sequel to the take-over of the company's wagons will be a return of capital, or some other special distribution for shareholders.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1946/47	No. of week	Aggregate traffics to date: Total 1947/8	Aggregate traffics to date: Increase or decrease
South & Central America	Antofagasta ...	811	26.9.48	£ 60,900	+ £ 4,278	39	£ 2,074,330	+ £ 444,842
	Bolivar ...	174	July, 1948	$28,960	– $69,357	30	$471,287	– $301,893
	Brazil ...	—	—	—	—	—	—	—
	Cent. Uruguay	970	25.9.48	30,075	+ 870	12	406,556	– 9,446
	Costa Rica ...	281	July, 1948	35,904	+ 5,239	9	77,536	+ 14,013
	Dorada ...	70	Aug, 1948	34,163	+ 3,063	30	209,829	– 34,071
	G.W. of Brazil ...	1,040	25.9.48	31,500	– 3,400	38	1,217,700	+ 800
	Inter. Ctl. Amer. ...	794	Aug. 1948	$996,899	– $52,158	35	$9,169,618	+ $157,550
	La Guaira ...	22¼	Aug, 1948	$95,776	– $1,298	35	$837,334	– $44,900
	Leopoldina ...	1,920	25.9.48	60,526	– 17,702	37	2,157,263	– 423,512
	Midland Uruguay ...	319	Aug, 1948	22,288	+ 5,183	8	45,295	+ 11,146
	Nitrate ...	382	30.9.48	14,111	+ 5,869	39	231,923	+ 59,369
	N.W. of Uruguay ...	113	Aug, 1948	4,784	+ 800	8	10,013	+ 2,566
	Paraguay Cent.	274	24.9.48	£100,022	+ £26,628	12	£1,226,561	+ £563,987
	Peru Corp. ...	1,059	Sept., 1948	196,290	+ 10,710	13	547,471	+ 29,708
	Salvador ...	100	July, 1948	c85,000	+ c10,000	4	c85,000	+ c10,000
	San Paulo ...	153½	—	—	—	—	—	—
	Taltal ...	156	Aug, 1948	5,495	+ 75	9	15,505	+ 4,500
	United of Havana ...	1,301	25.9.48	31,498	– 15,343	12	542,671	– 227,190
	Uruguay Northern	73	Aug, 1948	935	– 105	8	2,105	– 72
Canada	Canadian National ...	23,473	Aug, 1948	10, 10,000	+ 855,250	35	77,676,250	+ 5,854,000
	Canadian Pacific ...	17,037	Aug., 1948	7,735,500	+ 1,083,250	35	55,397,000	+ 4,108,000
Various	Barsi Light† ...	202	Aug, 1948	22,485	– 3,832	22	136,492	– 4,155
	Beira ...	204	June, 1948	112,390	+ 12,957	38	1,048,644	+ 219,747
	Egyptian Delta ...	607	10.8.48	18,444	+ 4,058	15	231,150	+ 20,480
	Gold Coast ...	536	Aug, 1948	158,926	+ 2,524	22	1,020,332	+ 236,755
	Manila ...	—	—	—	—	—	—	—
	Mid. of W. Australia	277	July, 1948	23,987	+ 4,505	4	23,987	+ 4,505
	Nigeria ...	1,900	July, 1948	504,437	+ 130,659	17	1,796,629	+ 380,119
	Rhodesia ...	2,445	Sept., 1947	643,980	+ 102,833	52	6,787,603	+ 612,938
	South Africa ...	13,347	4.9.48	1,405,764	+ 131,412	22	29,767,410	+ 1,840,723
	Victoria ...	4,774	May., 1948	1,439,718	+ 456,084	48	—	—

† Receipts are calculated @ 1s. 6d. to the rupee